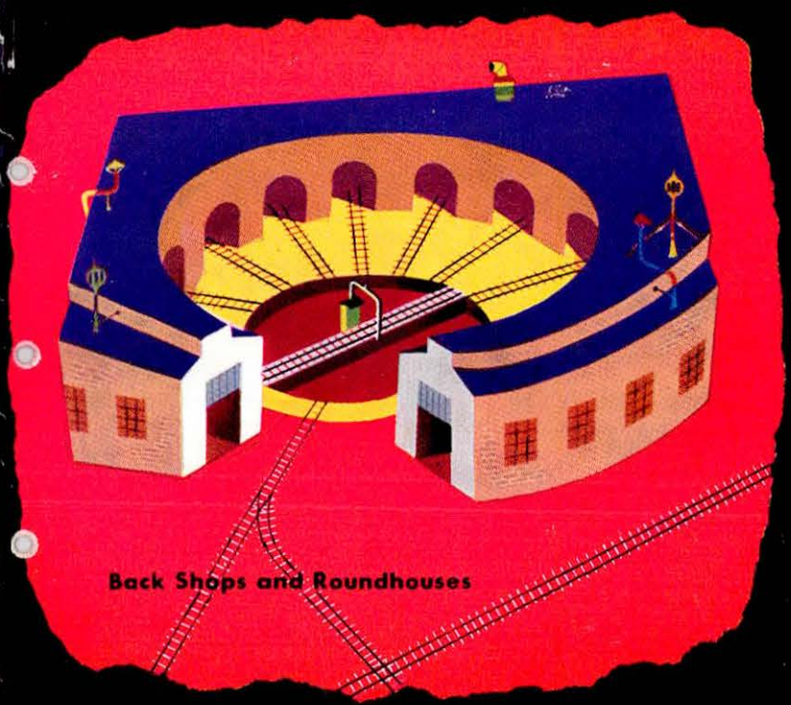
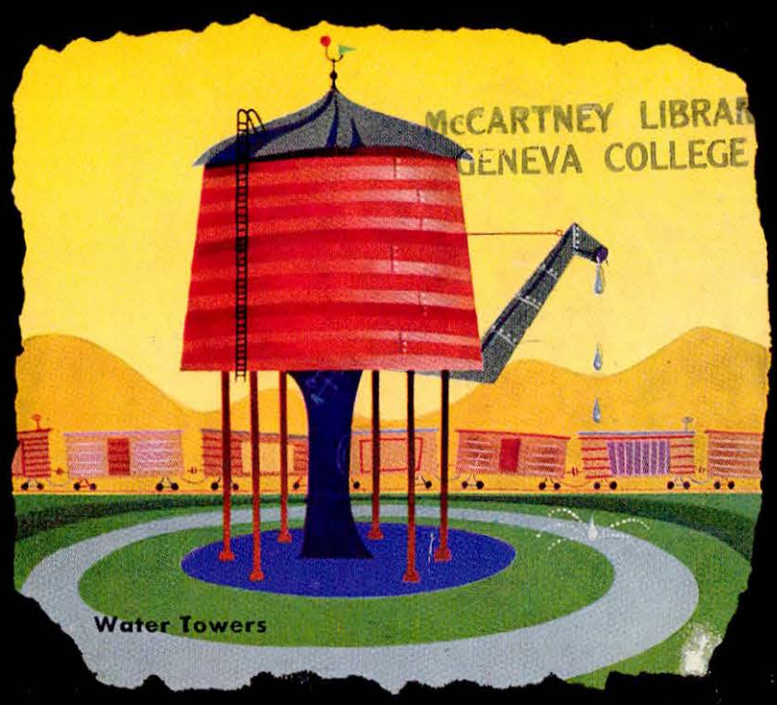
DECEMBER 14, 1953 A Suggested Way to Regain Business . . p. 92

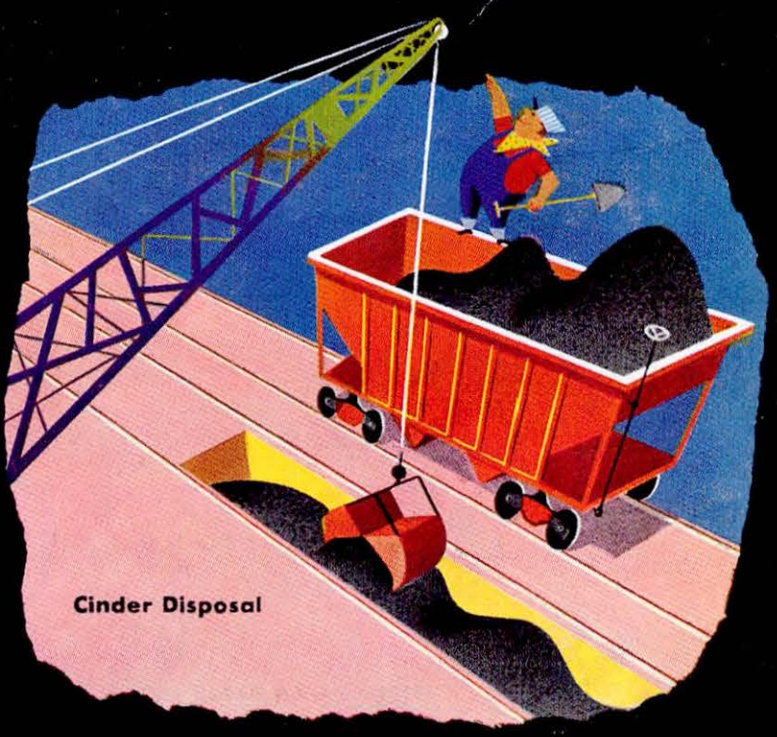
RAILWAY AGE

The Standard Railroad WEEKLY for Almost a Century





Complete dieselization eliminates or reduces the need for all these railroad facilities which cost railroads many millions of dollars each year. As long as *even* one steam locomotive remains in regular service, a railroad must spend money to maintain and operate these steam-supporting facilities. On *your* railroad, as on every railroad, savings in these supporting services help to make complete dieselization your best investment.

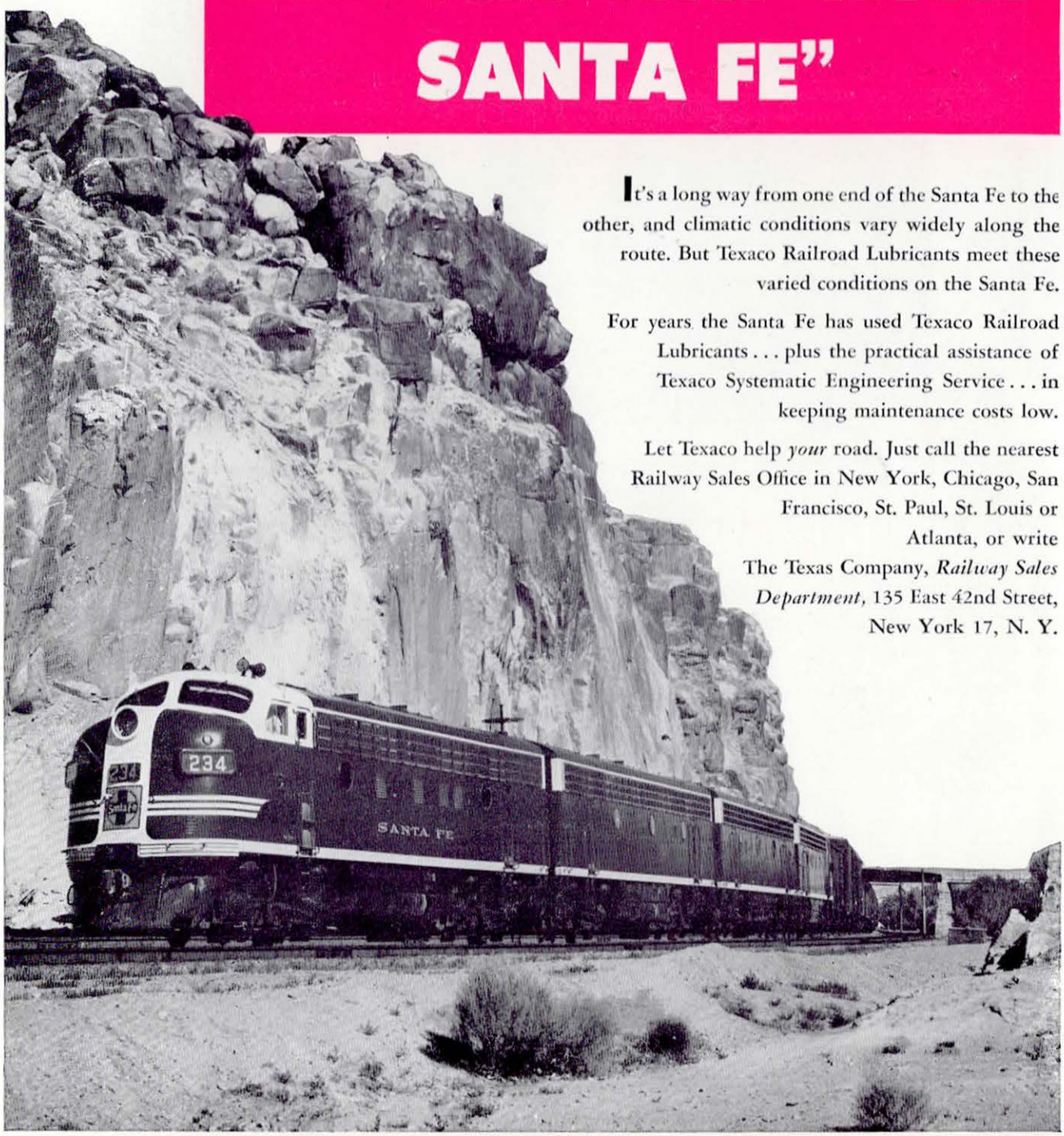


ELECTRO-MOTIVE DIVISION GENERAL MOTORS

La Grange, Illinois—Home of the Diesel Locomotive · In Canada: GENERAL MOTORS DIESEL, LTD., London, Ontario

GENERAL MOTORS LOCOMOTIVES

TEXACO GOES "ALL THE WAY WITH SANTA FE"



It's a long way from one end of the Santa Fe to the other, and climatic conditions vary widely along the route. But Texaco Railroad Lubricants meet these varied conditions on the Santa Fe.

For years the Santa Fe has used Texaco Railroad Lubricants . . . plus the practical assistance of Texaco Systematic Engineering Service . . . in keeping maintenance costs low.

Let Texaco help *your* road. Just call the nearest Railway Sales Office in New York, Chicago, San Francisco, St. Paul, St. Louis or Atlanta, or write The Texas Company, *Railway Sales Department,* 135 East 42nd Street, New York 17, N. Y.

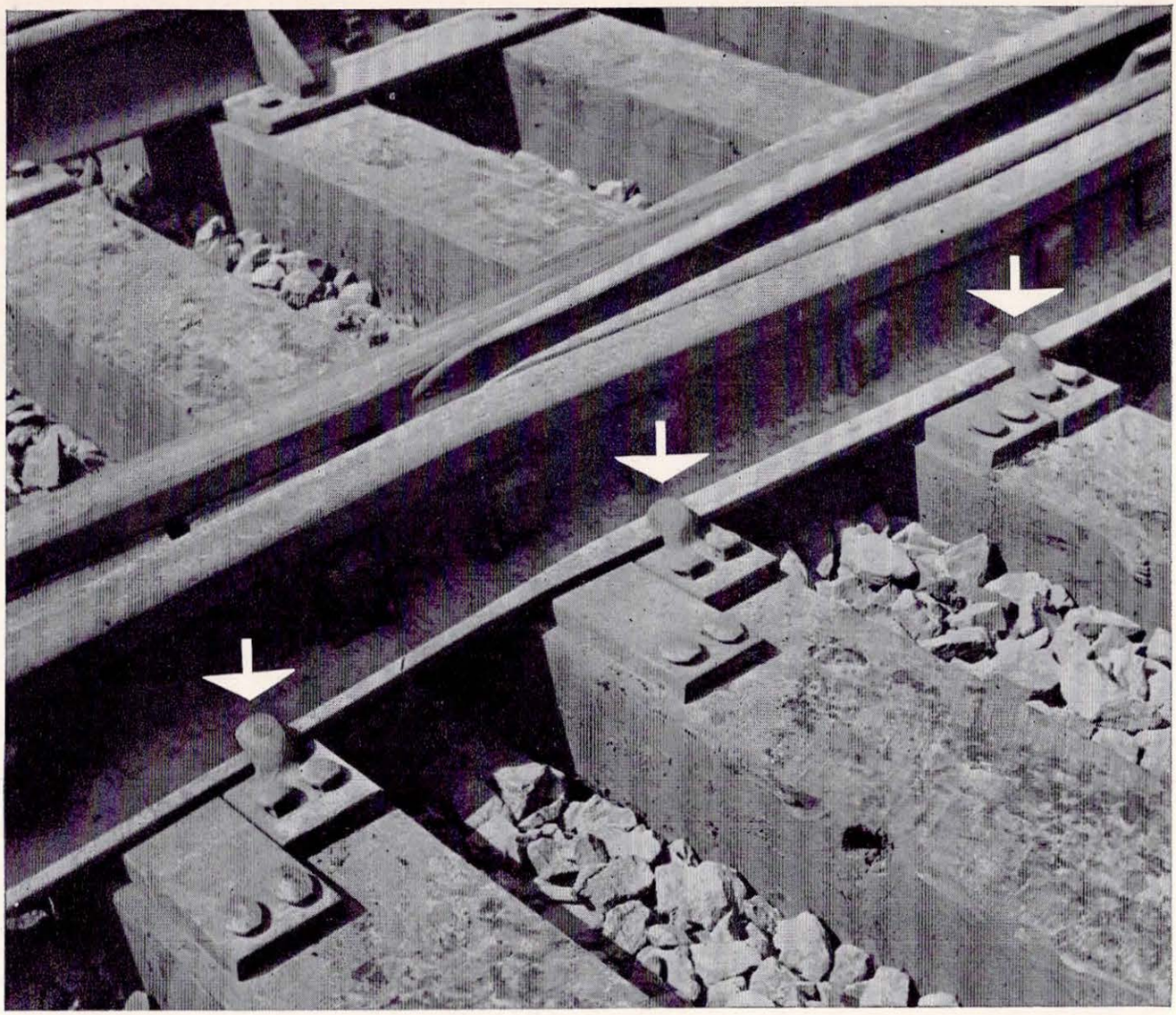
TEXACO

TEXACO Railroad Lubricants

AND SYSTEMATIC ENGINEERING SERVICE

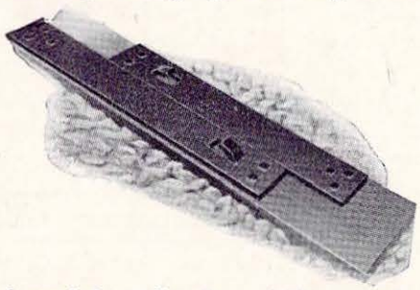
IN ALL 48 STATES

TUNE IN . . . METROPOLITAN OPERA radio broadcasts every Saturday afternoon. See newspaper for time and station.



How to keep a frog from loosening up

See these simple plates with the sturdy forged hooks? Their job is to keep a frog tight and rigid; to



keep it from jiggling, shifting position, or loosening up. And you will never find a more effective device for this purpose.

They are Bethlehem Twin Hook Frog Plates, and they are strong, low in cost, and so easy to install. As you will note, each plate has a hook at one end. The plates are always used in pairs. This means that any pair can be used at several *different* tie positions; no need for a large and confusing variety of lengths.

Because the hooks are big, they can take the most severe lateral thrust. They also hold down the frog base so that any lifting effect is minimized.

Install them just as shown in the pictures—two to a tie. Fasten them down with ordinary spikes. Then you'll have a frog that doesn't chatter, loosen, or work itself out of alignment.

Plates are stocked in several lengths and can always be furnished with either high or low hooks. They are a low-cost item, lessen maintenance expense, and represent a big investment in safety. Write our nearest sales office for more details or Folder 390.

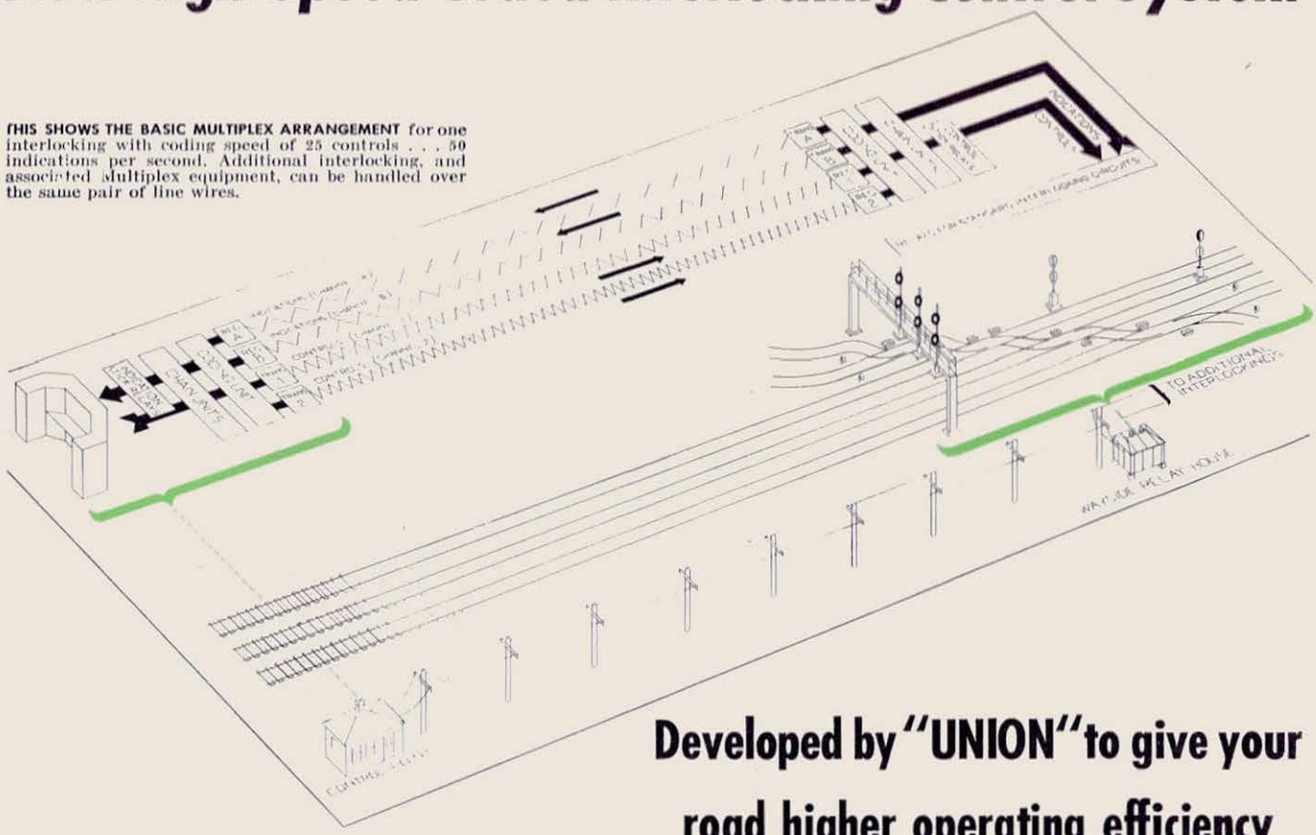
BETHLEHEM STEEL COMPANY
BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. Export Distributor: Bethlehem Steel Export Corporation

BETHLEHEM STEEL

BETHLEHEM TWIN HOOK FROG PLATES

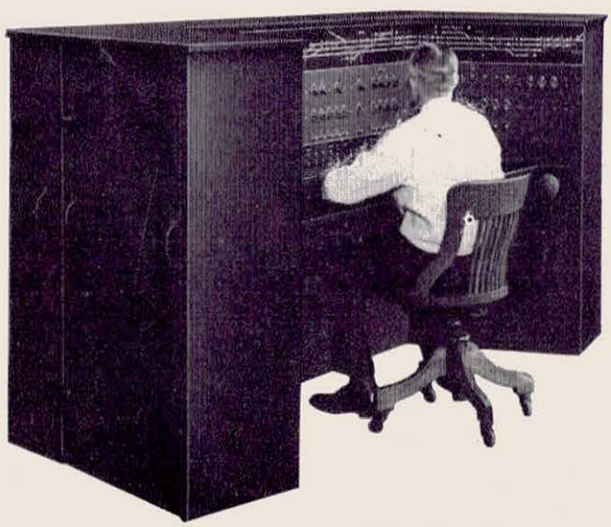
New High-Speed Coded Interlocking Control System



THIS SHOWS THE BASIC MULTIPLEX ARRANGEMENT for one interlocking with coding speed of 25 controls . . . 50 indications per second. Additional interlocking, and associated multiplex equipment, can be handled over the same pair of line wires.

Developed by "UNION" to give your road higher operating efficiency

"UNION" Multiplex Code Control System



THE MULTIPLEX CODE CONTROL SYSTEM uses standard Style C or UR control machines.

ARE you planning to build a new remotely-controlled interlocking . . . modernize an older one . . . or consolidate present interlockings for greater economies? If you are, consider these features of the new "Union" Multiplex Code Control System:

- It's the fastest all-relay coded interlocking control system yet developed.
- Basic system transmits 25 controls and 50 indications per second. Can be expanded in multiples of 25 controls and 50 indications per second, such as 50 and 100 per second . . . 75 and 150 per second . . . *simultaneously* over one pair of line wires.
- Each code can contain complete control and indication information for all functions at the interlocking . . . therefore a complete route can be set up with one code.

The "Union" Multiplex Code Control System is designed especially for large and busy interlockings. May we tell you the rest of the story?

UNION SWITCH & SIGNAL

DIVISION OF WESTINGHOUSE AIR BRAKE COMPANY

SWISSVALE PENNSYLVANIA

NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO

RAILWAY AGE

PUBLISHED WEEKLY BY THE SIMMONS-BOARDMAN PUBLISHING CORPORATION AT ORANGE, CONN., AND ENTERED AS SECOND CLASS MATTER AT ORANGE, CONN. UNDER THE ACT OF MARCH 3, 1879. NAME REGISTERED IN U. S. PATENT OFFICE AND TRADE MARK OFFICE IN CANADA. EDITORIAL AND EXECUTIVE OFFICES AT 30 CHURCH STREET, NEW YORK 7, N. Y., AND 79 WEST MONROE STREET, CHICAGO 3, ILL. BRANCH OFFICES: 1081 NATIONAL PRESS BUILDING, WASHINGTON 4, D. C.—TERMINAL TOWER, CLEVELAND 13, OHIO—TERMINAL SALES BUILDING, PORTLAND 5, ORE.—1127 WILSHIRE BOULEVARD, LOS ANGELES 17, CAL.—244 CALIFORNIA STREET, SAN FRANCISCO 11, CAL.—2909 MAPLE AVENUE, DALLAS 4, TEX.

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Dec. 14, 1953 **Vol. 135, No. 24**

Week at a Glance

Passenger service between Chicago and Los Angeles is due for major improvement next January 10, with the UP, the C&NW and the Santa Fe all participating in the changes. **11**

A $9-million drop in net income was reported by Class I railroads for October, as compared with the same month of 1952. Cumulative net income for 10 months, however, is $110 million above last year's. **17**

Freight operating statistics of large railways for September 1953 and 1952. **60**

Railway purchases were a shade higher in the first nine months of 1953 than in the comparable period last year. **69**

FORUM: Regulation is a lot like prohibition. The "built-in" economic restraints resulting from today's competitive conditions in transportation are far more effective than any conceivable system of government control. **85**

More tracks for more traffic are now available in the Indiana Harbor Belt's Blue Island yard, as a result of a comprehensive $3.5-million modernization project. **87**

Long freight trains cannot be successfully operated merely by adding extra diesel units, lengthening sidings and installing new signals and communications. Other important factors also are involved. **90**

A way to regain business, by helping customers cut their overall transportation costs, is suggested in a paper by C. A. Church of the General Electric Company **92**

An all-purpose electric shop for diesel electrical overhaul and maintenance of car lighting, air conditioning

ANOTHER CONTRIBUTION FROM

Matisa

THE TIE RENEWAL MACHINE

SMALL IN SIZE, LOW IN COST, BUT...
***FAST* IN OPERATION, *HEAVY-DUTY* IN CAPACITY!**

Here's a NEW *Matisa* contribution for *better* track at *lower* cost. The Tie Renewal Machine is a *low original-investment* machine, yet takes out old ties, re-spots and replaces new ones at *half* the cost of the old style methods!

For small or large operations, this machine is speedy — and rugged; works smoothly and efficiently moving old ties out leaving no rough track; new tie moves into precise position *in either direction* with a flip of a lever. More *Matisa progressive* and *precise* engineering to help your road maintain "the new standard of track maintenance."

THE Matisa EQUIPMENT CORPORATION

TRACKWORK SPECIALISTS ALL OVER THE WORLD

224 South Michigan Blvd. • Chicago 4, Illinois

Current Statistics

Operating revenues, ten months	
1953	$ 9,016,553,959
1952	8,738,507,372
Operating expenses, ten months	
1953	$ 6,780,942,483
1952	6,680,564,078
Taxes, ten months	
1953	$ 1,085,573,098
1952	1,048,218,626
Net railway operating income, ten months	
1953	$ 952,692,110
1952	856,877,240
Net income, estimated ten months	
1953	$ 740,000,000
1952	630,000,000
Average price railroad stocks	
December 8, 1953	59.20
December 9, 1952	67.82
Carloadings revenue freight	
Forty-eight weeks, 1953	35,889,366
Forty-eight weeks, 1952	35,313,399
Average daily freight car surplus	
Wk. ended December 5, 1953	60,270
Wk. ended December 6, 1952	5,902
Average daily freight car shortage	
Wk. ended December 5, 1953	217
Wk. ended December 6, 1952	1,532
Freight cars delivered	
November 1953	6,137
November 1952	5,929

RAILWAY AGE IS A MEMBER OF ASSOCIATED BUSINESS PUBLICATIONS (A.B.P.) AND AUDIT BUREAU OF CIRCULATION (A. B. C.) AND IS INDEXED BY THE INDUSTRIAL ARTS INDEX AND BY THE ENGINEERING INDEX SERVICE. RAILWAY AGE INCORPORATES THE RAILWAY REVIEW, THE RAILROAD GAZETTE, AND THE RAILWAY AGE GAZETTE.

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Week at a Glance CONTINUED

and general purpose motor and control equipment, is now in operation on the B&O. **96**

Modernization cuts yard time and means more efficient operation for the Minnesota Transfer at St. Paul. **100**

Why hot boxes occur as they do is indicated in a report on a study of hot box case histories, by the Railway Service & Supply Co. **105**

How "cycling" diesels pays, by making possible high mileage even on short runs, is outlined by G. T. Bevan, of General Electric. **109**

BRIEFS

Another one-cent-per-hour wage increase will probably go to railroad employees on January 1 as a result of further rises in the Consumers' Price Index. The November 15 index, due later this month, will determine the change. Unless there is a drop from the October 15 level, the one-cent boost is set.

Still another use for walkie-talkies is being explored by the Texas & Pacific. When field engineering parties go out on projects that cover sizable areas, they employ portable units to maintain contact. The idea enables instant communication over a much wider territory than could be effectively handled with hand signals or runners.

Hotels and restaurants may spring up around airports under guidance of a car rental agency that specializes in plane-auto service. The Avis Rent-A-Car System, of Detroit, has opened a restaurant near Chicago's Midway airport and a 100-room hotel is now under construction on adjacent land. System President Warren E. Avis is reported to have told an enthusiastic crowd of airline officers that his firm will build a series of restaurant-hotels at key airports across the country. His plane-auto rental business began six years ago with 10 cars. Now it has 6,000, and more than 500 outlets.

Week at a Glance CONTINUED

More piggy back. — The Chicago & North Western inaugurated overnight truck trailer-on-flat-car service between Chicago and Milwaukee December 10. Like the road's recently established trailer services to Green Bay, Wis., to Omaha, and to the Twin Cities, the new service is conducted with the road's own pick-up-and-delivery trailers.

"The St. Lawrence waterway project . . . may be the first matter taken up when the Senate reconvenes in January. Ironically, the second matter . . . very likely will be the question of increasing the national debt limit. It is difficult to see how taxpayers could more easily save, initially, $110,000,000, than by defeat of the Wiley resolution, which would create a Government Development Corporation empowered to borrow this amount from the Treasury to construct a 27-ft. channel through the International Rapids section of the St. Lawrence river . . . This initial saving of $110,000,000 would not be all the saving . . . because this $110,000,000 would be an entering wedge to . . . a 'seaway' connecting the Great Lakes with the Atlantic Ocean . . . the ultimate cost would be a good two billion dollars."—*National St. Lawrence Project Conference.*

Second most unpopular excise tax, of all those put into effect during World War II, is that on transportation, according to results of a recent Gallup poll. Among persons queried by the famous research organization, dislike for the burdensome 15 per cent tax on passenger transportation was exceeded only by dislike for the tax on telephone calls.

The prosperity and profits that were expected to flow from inland river terminals, built at the expense of local taxpayers, just haven't materialized, according to figures compiled by the Railroad Cooperative League of Michigan. In eight years, says the Michigan group, Minneapolis lost $2,731,764 on its terminal; Kansas City spent $320,000 in bonds and $266,800 in interest, and in six years lost $172,264; Rock Island, Ill., in 18 years, lost $265,471.

If the Cotton Belt's proposed lease of its subsidiary St. Louis Southwestern of Texas is consummated, as an I.C.C. examiner has recommended, Tyler, Tex., will become the practical headquarters of the combined systems. Some executive, traffic and purchasing officers, according to the examiner's report, would be retained in St. Louis, but accounting, treasury and industrial forces, most of the legal and traffic work, and part of the executive staff would be transferred to Tyler. On the other hand, some mechanical functions would be moved from Tyler to Pine Bluff, Ark.

A memorial to the late Fred A. Poor may soon take the form of a substantial endowment for the University of Illinois Y.M.C.A., and construction of a library and historical room to complete the third floor of the "Y's" building on the campus. Mr. Poor, whose career in the railway supply field was detailed in the September 7 *Railway Age*, was actively associated with the university during much of his life and at one time had served as chairman of the trustees. Support for the memorial idea is coming equally from railroad men and Mr. Poor's fellow suppliers.

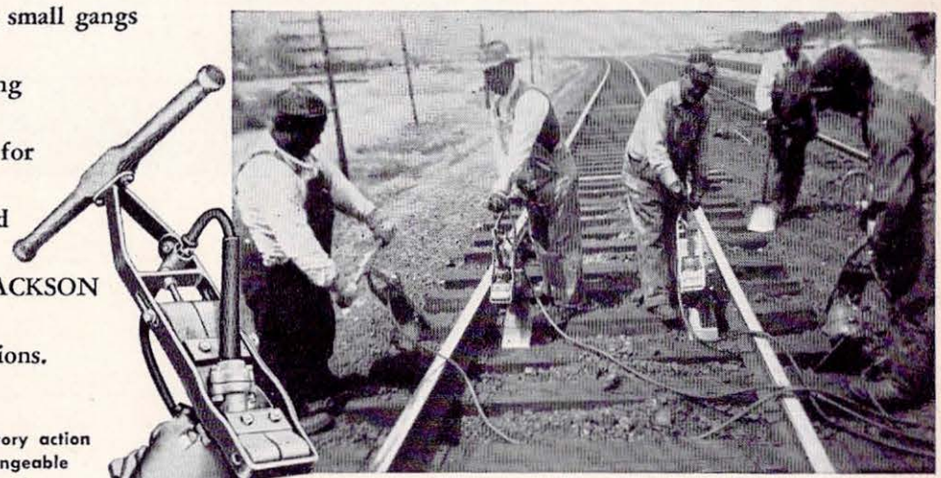
The strike which stopped publication of New York's daily newspapers for 10 days during the past two weeks having deprived the city's commuters of their customary reading matter, the New York Central, on December 2, began placing mimeographed summaries on seats of its outgoing trains.

THE *FACTS* WILL SOUNDLY BACK
Your 1954 Budget Recommendation
of JACKSON MULTIPLE TAMPERS

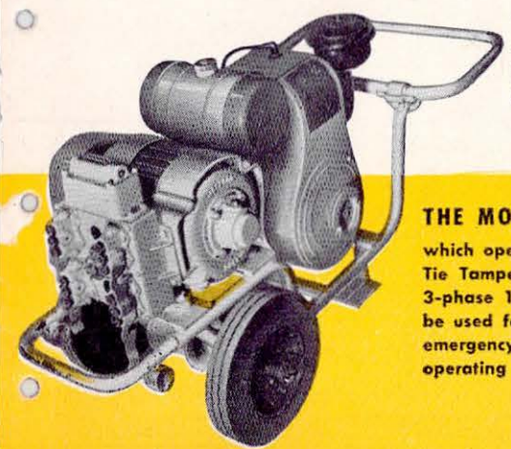
On leading railroads throughout America it has been thoroughly established that the JACKSON MULTIPLE TAMPER will put up perfect track at less cost than can be achieved by any other means. Wide range usefulness is the secret of high annual production with real economy, in low to high track lift operations, in all ballasts. And, low-cost machine maintenance merits consideration, too. Write, wire or phone for any information desired.

JACKSON 2 to 4- TAMPER OUTFITS

For many years the choice of the vast majority of the nation's railroads. Ideal for low-lift and smoothing work with small gangs using 2 to 4 tampers. Also excellent for major ballasting or out-of-face operations since several may be grouped for this purpose. For maximum maintenance economy and top quality track include both the MULTIPLE and JACKSON HANDTAMPERS in your 1954 budget recommendations.

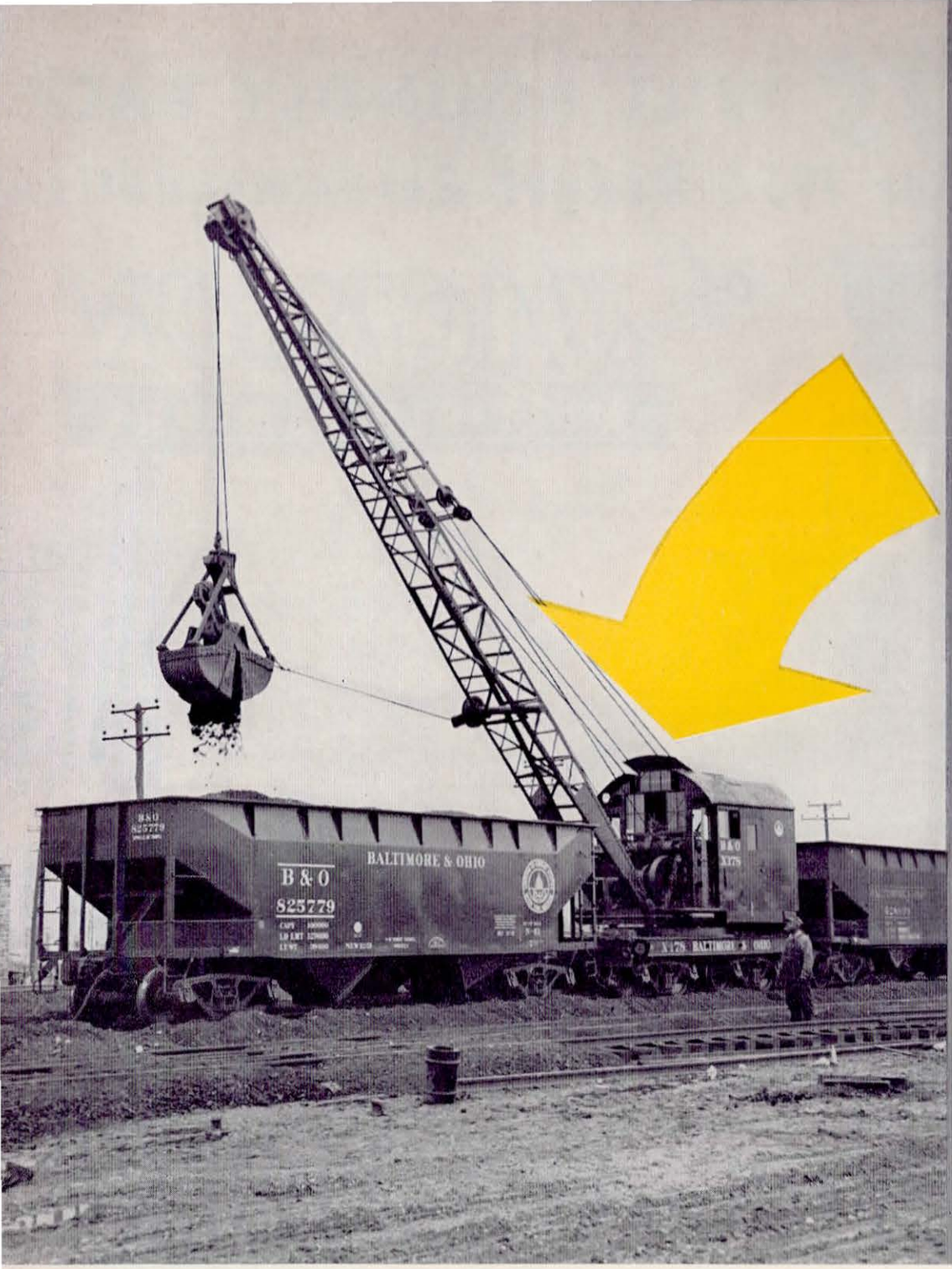


Their unique, vibratory action and quickly interchangeable blades make them peak performers under all conditions.



THE MODEL M-22 POWER PLANT which operates 2 to 4 Jackson Vibratory Tie Tampers supplies both single-phase and 3-phase 120 V. 60 Cy. AC, and may be used for emergency signaling, emergency CTC operations, lighting and operating various power tools.

ELECTRIC TAMPER & EQUIPMENT CO.
LUDINGTON, MICHIGAN
CANADIAN REPRESENTATIVES:
MUMFORD, MEDLAND, LTD., WINNIPEG, MANITOBA



Now this B&O crane has big, yellow muscles

A long life, and a productive one, was given this Browning 22-ton Railroad Crane when a Caterpillar D318 Railroad Diesel replaced the original steam power.

The economy of Caterpillar power becomes evident the minute you put it to use. For instance, the B&O crane, unloading cinders along new track, uses only 10 to 15 gallons of inexpensive No. 2 furnace oil each 8-hour work day.

By repowering with Caterpillar Railroad Diesels, railroads find they no longer have water problems or lost time with dirty boilers. And in cases of emergency, there are no long waits to get up steam.

Easy to install and operate, these powerful, rugged Diesels require only a few simple adjustments. And most important, you do not have to tie up railroad funds in a large inventory of parts. You are never far from a Caterpillar Dealer or parts depot. You can get parts in a matter of hours.

Leading manufacturers of railroad cranes, locomotives and other on-track equipment can supply you with Cat* Railroad Diesels. Specify them in the next equipment you buy. And for replacement power, your Caterpillar Dealer has the right engine for you—one of 12 sizes up to 500 HP.

Caterpillar, Peoria, Illinois.

CATERPILLAR*

*Both Cat and Caterpillar are registered trademarks—®

SPECIFY CAT POWER FOR HIGH-PROFIT PERFORMANCE

The "Challenger" Returns

Prewar name train to re-enter Chicago-Los Angeles service as a 39½-hr. streamliner; "City of Denver" gets all new equipment, including "Pub" car

Three major changes will be made in the jointly operated passenger train services of the Chicago & North Western and the Union Pacific when, on January 10, the two roads will:

(1) Restore the prewar "Challenger" service between Chicago and Los Angeles on a 39½-hr. schedule. While primarily for coach passengers, the new daily train also will offer Pullman accommodations. It will be composed of streamlined equipment and will be diesel powered.

(2) Replace all equipment of the streamlined "City of Denver," which offers overnight service between Chicago and Denver.

(3) Discontinue extra fare charges on the "City of Los Angeles" without changing this train's schedules, equipment or services.

Holdover—"Challenger" service had its origin in the lean days of the Thirties. The C&NW, the UP and the Southern Pacific then instituted a low-cost, coach and tourist sleeper train, comprised of standard equipment completely modernized with the then latest seating, lighting and air conditioning equipment. The trains served Chicago and West Coast terminals on a schedule of about 60 hours and won back considerable patronage to the rails. They were steam powered.

One of the traffic-getting features of the "Challengers" was their low-cost meals. This feature is to be retained in the new Chicago-Los Angeles "Challenger" service, according to the two roads. Breakfast will be 65 cents; luncheon, 85 cents, and dinner, $1—a total of $2.50 per day for meals.

Schedules of the new trains have been arranged so the more scenic parts of the journey are made in daylight. From Chicago, for instance, departure is at 9 a.m. with arrival at Los Angeles at 10:30 p.m. the second evening—only one night en route. This is in contrast with the schedule of the streamlined "City of Los Angeles," which has an evening departure and morning arrival.

There will be no extra fare on the new "Challenger" and the family fare plan (*Railway Age*, September 21, page 12) will apply. Coach equipment will feature leg-rest seats, and coach passengers may avail themselves of all dining and lounge car facilities on the train.

With inauguration of the new "Challenger" service, the "Los Angeles Limited" is being withdrawn from service. The third daily coach and Pullman train between these points—"The Gold Coast"—continues without change.

"The Pub"—A highlight of the new equipment for the "City of Denver" is a coach-lounge car called "The Pub." Motif for the lounge section is the historic English public house—complete with leaded windows, wood paneling and heavy oak floors.

The original "City of Denver" equipment—one of the first full-length coach and Pullman streamliners ever built—was retired early this year. Constructed in 1936, the semi-articulated cars had traveled a total of 12,139,160 miles before they were replaced temporarily

SANTA FE MAKES CHANGES, TOO

Right on the heels of the C&NW-UP announcement detailed herewith, the Santa Fe announced it would:

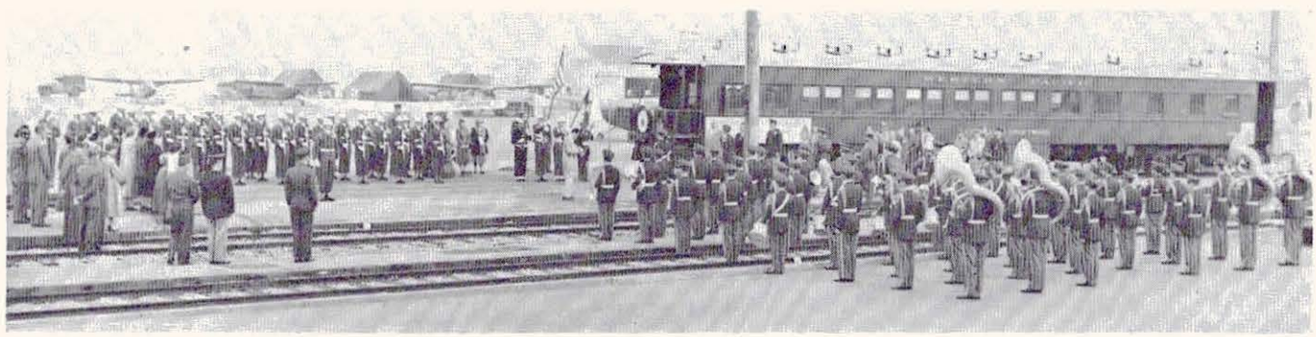
(1) Eliminate extra fare charges on its Chicago-Los Angeles "Chief" and "El Capitan."

(2) Reduce the present 45-hr. schedule of the all-Pullman "Chief" to 39 hours, 30 minutes westbound, and 39 hours, 45 minutes eastbound.

(3) Place chair cars on the "Chief" for the first time in the train's history.

(4) Reduce extra fare charge now applied on the "Super Chief" from $15 to $7.50.

All these changes in the Santa Fe's Chicago-Los Angeles service will be effective January 10. In addition to the new chair cars, the "Chief" will carry Pullman sleeping cars, two diners and lounge facilities. Low-price "budget" meal service will be available on both the "Chief" and the all-coach "El Capitan." The "Chief's" new schedule calls for 9 a.m. departure from Chicago and 10:30 p.m. arrival the second evening. Eastward the train will make an early afternoon departure with arrival early the second morning.



RETIRED WITH HONORS.—The Western Pacific's blood procurement car, "Charles O. Sweetwood," ended its military career at San Francisco November 10 amid special military ceremonies. "The voices of those who received blood when they needed it are always raised in gratitude," said Major General Frank H. Partridge, deputy commander of the Sixth Army. Like appreciation was expressed to the railroad by the American Red Cross, which staffed the car. During its 2½-year tour of duty, the car traveled 28,488 miles over 11 different railroads in four states to collect more than 25,000 pints of blood for the armed services. It will now return to railroad service as a business car. However, it will be held in readiness for further blood procurement service should the need arise, WP President Frederic B. Whitman explained. The car was named to honor the first WP employee killed in Korean action.

by substitute equipment drawn from other streamlined trains. The new trains will have reserved seat coaches equipped with individual lighting, and adjustable foam rubber seats with leg rests. Sleeping accommodations will include sections, roomettes, bedrooms, drawing rooms and compartments. Schedules will be unchanged.

Transcontinental sleeping cars, formerly handled west of Chicago on the "Los Angeles Limited," will be handled by the "City of Los Angeles" after January 10.

NYC, Northern Pacific Enter Per Diem Case

The New York Central and Northern Pacific have been authorized by the I.C.C. to intervene in the per diem case. They will support the so-called "complainant roads"—those which are asking the commission to find per diem rates since 1949, including the present $2.40 rate, have been just and reasonable.

Joining in NYC's intervention petition were three of its affiliates—the Pittsburgh & Lake Erie, Indiana Harbor Belt, and Toronto, Hamilton & Buffalo. (*Railway Age*, September 28, page 11.)

Latest date set by the commission for the opening of public hearing in the case is January 18, 1954. The opening previously scheduled for December 8 was canceled. The hearing will be conducted by Commissioner Knudson and Examiner Hosmer.

A.A.R. Road Tests Fitted Journal Bearings

In connection with its current hot box studies, the Mechanical Division of the Association of American Railroads has announced that it is collaborating with the Merchants Despatch Transportation Corporation in a test of fitted journal bearings applied to refrigerator cars. Cars with these bearings now being turned out of shops and placed in regular interchange service are in the following series: 300 NRC cars, 16,500 to 16,799, incl.; 700 MDT cars, 12,000 to 12,699, incl.

All these cars are stenciled over the bolster above the repack date with the following legend: "A.A.R. Test 202. If journal bearings are removed, retain and notify owner." It is requested that the MDT office be advised as to cause of removal so that sufficient data can be accumulated to show the relative merits of fitted vs. standard journal bearings, as well as the effect of lining journal bearings with Satco metal. It is also urged that any pertinent data on condition of bearing and journal which may be helpful in an evaluation of this design should be reported when the bearings are renewed.

Eastern RR's Efficiency Double That of 1929

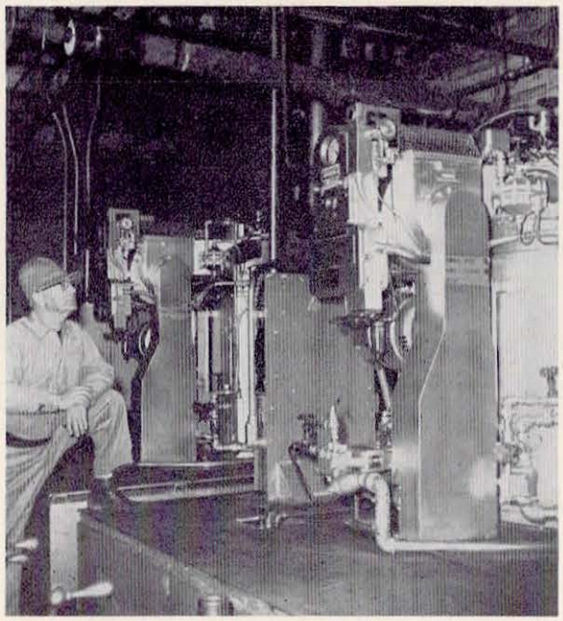
Eastern railroads' peak of efficiency as they entered the final month of 1953 was nearly double that of 1929, their busiest peacetime year before World War II, according to David I. Mackie, chairman of the Eastern Railroad Presidents Conference.

"In the first eight months of this year," Mr. Mackie said, "gross ton-miles per freight train-hour — a measurement which takes into account factors of both speed and load — averaged 50,272 in the Eastern district, including the Pocahontas region. The figure for 1929 was only 26,796 gross ton-miles, which means the increase since then has been 87.6 per cent. For the first eight months of 1953, gross ton-miles per freight train-hour showed an increase of 1,726 over 1952."

Effect of New Power—Mr. Mackie also noted that extensive purchases of new motive power by Eastern roads since the end of World War II have led to an increase of more than 67.9 per cent in average daily mileage per serviceable freight locomotive since 1929. The 1929 figure was 75.6 miles per day; by 1952 this had risen to 120.3 miles, and for the first eight months of 1953 it was 126.9 miles.

Heavy railroad investment in new and more powerful locomotives has resulted in a steady increase in average number of freight cars per train, as well as in net tons per train, he continued. In 1929, freight trains on Eastern railroads averaged 53.9 cars and trains carried an average of 981 net tons of freight. By 1952, the number of cars had increased to 64.9 and net tons of freight per train to 1,472. In this year's first eight months, average number of cars per freight train was 65.7, a slight increase over 1952, although net tons per train dropped slightly, to 1,462.

Other important indicators of railroad operating efficiency, such as net tons per car and average freight train speed, also have improved considerably since 1929. Net tons per car were 29.8 in 1929, moving up to a peak of 35.8 in 1947. Since that time there has been a decline to 35 tons for the first eight months of 1953. Average freight train speed on Eastern railroads moved up from 12.9 miles per hour in 1929 to 16.2 miles in 1952 and 16.7 miles in 1953.



WHEN THE UNION PACIFIC modernized some of its older diesel passenger units and equipped them with new OK type Vapor-Clarkson steam generators for train heating, they rebuilt two CFK type generators in the Omaha shops and placed them in the Valley, Neb., shops.

At the new location, the two old generators supply 150-lb. steam for the air compressor, steam-driven pumps, shop heat, steam cleaning, and to draft steam locomotives while being fired up. The automatic steam generators are saving labor and fuel costs on this job compared to the older type boilers previously used.

Labor & Wages

Conciliator Named in Canadian Wage Case

H. R. Pettigrove and Raoul Trepanier, two officials of the Canadian federal labor department, have been named by Labor Minister Milton Gregg as conciliators, to try to effect a settlement of the wage dispute between Canadian railways and 150,000 non-operating union employees.

The union demands consist entirely of "fringe" benefits, including paid vacations, triple pay for work on statutory holidays, and time off for sickness. According to unofficial estimates, they would be equivalent to a 15-cent-per-hour wage increase, and would reportedly involve a total additional cost of $60 million per year.

Average pay was boosted last year by 16 cents, to an average of $1.46 an hour.

I.C.C. Gets Tariff Simplification Plea

Month's reprieve is no relief on class rate circuity limitations, railroads tell commission in asking it to override Division 2

The railroads have asked the Interstate Commerce Commission to override its Division 2 and set back beyond next January 1 the effective date of circuity limitations which the commission attached to the fourth-section relief it granted in connection with the No. 28300 class rate adjustment.

The plea, filed by chairmen of the three regional traffic associations, is part of the tariff simplification program being carried out by the Railroad's Tariff Research Group. Division 2's order postponing the deadline only until January 1 was called "tantamount to denial" of the railroad's appeal for delay which they consider desirable.

Broad Plea Pending—That appeal is bottomed generally on a contention that the 28300 limitations (which are embodied in Fourth Section Order 17212) should not become effective until the commission has passed on the pending railroad application (F.S.A. 28580) for general relief from the fourth section's long-and-short-haul clause to permit carriers with indirect routes to meet the competition of direct routes, without circuity limitations or other restrictions of any kind (*Railway Age*, October 26, page 13).

The National Industrial Traffic League is supporting this general application, its intervening petition having been filed with the commission December 3. The league's support was extended formally at its recent annual meeting in New Orleans (*Railway Age*, November 30, page 72), although it had been anticipated when the railroad application was filed.

The 28300 Phase—Filed along with that application was a petition seeking a tied-in postponement of the effective date of the 28300 limitations, which date was then December 1. By an order dated November 24, Division 2 granted only the month's delay—until January 1.

In their appeal to the entire commission, the railroads do not rest on their contention that the pending general application is "ample cause" for granting the relief sought. They put forth "other valid grounds" in support of the plea.

Double Standard—First of these is the situation resulting from the fact that the older class rate systems have continued in effect for application to exception-rated traffic since the 28300 scale was installed May 30, 1952. Of these older structures all prescribed by the commission, only one (the southern system prescribed in Docket 13494), "was ever made subject to circuity limitations of any kind."

The appeal suggested that perhaps the commission was there "motivated by the absence in Southern territory of any comprehensive framework of routing provisions in the form of routing guides." In any event, the railroads added, elsewhere in the "vast and important area" east of the Rocky Mountains, the commission "has never prescribed circuity limitations and for more than 20 years the movement of class rated traffic has not been fettered with complex circuity limitations."

"This fact alone," the appeal continued, "is enough to raise the question: Why, in all haste, must the newer system of class rates be burdened with these limitations? . . . The fundamental soundness, the effectiveness, and the practicality of circuity limitations of any kind . . . have been challenged in F.S.A. 28580 . . . Applicants have shown . . . that circuity limitations produce tariff complexity of the gravest import; that circuity in the movement of traffic is negligible."

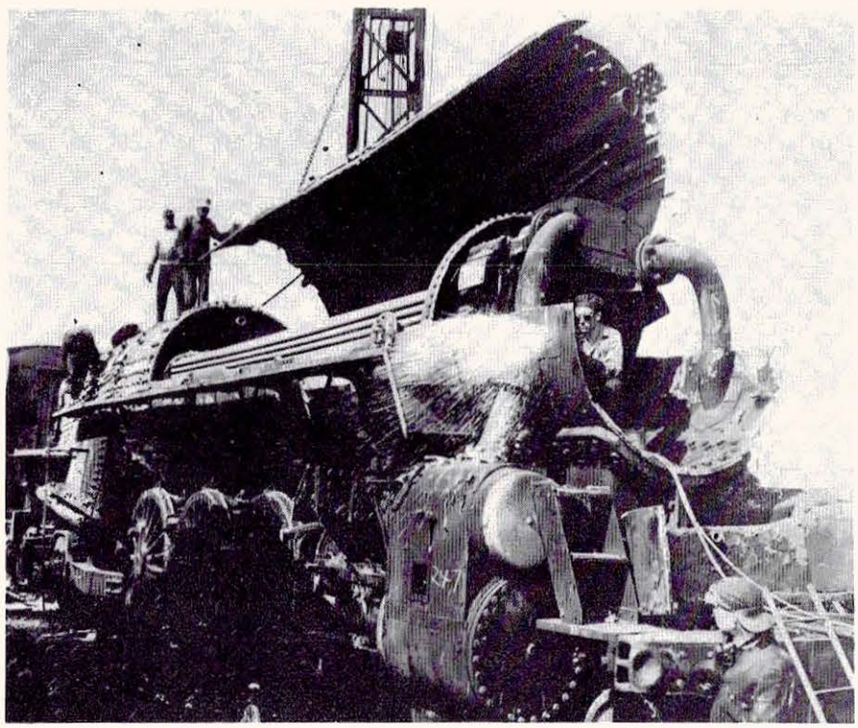
Shipper-Carrier Front—Reference was made to the N.I.T. League's support, and the appeal then closed with this assertion: "With shippers and carriers united before the commission in seeking a comprehensive review of the basic principle of circuity limitations, per se, there should be no extension of the principle of such limitations until F.S.A. 28580 has been fully heard, the evidence and argument considered and decision entered by the commission."

The N.I.T.L.'s intervening petition in support of F.S.A. 28580 "strongly" endorsed two of that application's concluding representations, which read as follows:

(1) That the circuity limitations commonly imposed in granting relief from the long-and-short-haul clause . . . result in heavy costs and other burdens upon the railroads and the public without compensating benefits.

(2) That blanket relief on the grounds of circuity is in the public interest.

As to the third railroad representation—"That the commission possesses authority under the existing statute to grant the relief sought"—the League urged "a reasonable, practical and realistic interpretation of section 4, having regard to the history of the treatment and enforcement of that section."



ONLY TWO STEAM LOCOMOTIVES will be left on the Seaboard Air Line by the end of 1953. The road is now scrapping 100 steamers, one of which is shown here, that had been held in reserve retirement pending an all-out national emergency during the Korean war. One of the two steam locomotives to be retained is a 4-wheel oil burner specially built in 1936 which does relief switching work in Columbus, Ga. Although used infrequently, it is held as a standby for a diesel switcher. The other steamer to be retained is a standard-type mainliner, to be preserved as a souvenir.

That general statement came in for a couple of pages of discussion and explaining, all of which led to this:

There would be considerable inconsistency in urging that the commission has had broad powers, exercised for a great many years, of extending general and continuing fourth-section relief in class rate and grain cases, and yet cannot now extend the same sort of general relief, for the immediate future, in the interest alike of shippers and carriers in cases of circuity as contemplated by this application. If either or both of these actions are questionable, the remedy must be by repeal of section 4 (1).

Rates & Fares

I.C.C. Gets Railroad Case On Refrigeration Charges

The railroads advised the I.C.C. last week that refrigeration charges must be increased in order to recoup losses from that service which now run in excess of $12,000,000 annually.

Hearings on the railroad petition to increase such charges got under way December 9, before Examiner G. B. Vandiver. Lead-off witness for the rail carriers was W. T. Jamison, chairman of the National Perishable Freight Committee, Chicago.

Mr. Jamison discussed a cost study conducted by his committee in 1951. He said this study pointed up railroad losses, and he called the $12,000,000 estimate of such losses a "conservative" one. The proposed increases in Section 2 and Section 4 of Perishable Protective Tariff No. 16 are designed to make up such losses and provide a "reasonable return on investment" (*Railway Age*, September 7, page 13).

A Smaller Increase — The railroad spokesman said minor adjustments have been made in the railroad petition since it was filed with the I.C.C. in August. As a result, the present proposal is for a 30 per cent boost in Section 2 charges instead of 31.6 per cent.

Increases proposed under Section 4 of the tariff are on a "per ton of ice" basis. Mr. Jamison said present territorial arrangements would not be disturbed and the proposed boost for ice supplied in bunkers ranges from 23 cents per ton in Florida to $4.08 per ton in northern Michigan, Wisconsin, Montana, Minnesota, and North and South Dakota. Charges for salt would be increased to $1.02 per 100 pounds in all territories.

Substantial opposition to the railroad request was indicated at last week's hearing. Fruit and vegetable interests in California, Texas and Florida, various meat packing concerns, the Department of Agriculture and the Florida Railroad & Public Utilities Commission are among the opponents.

Furlough Fares Extended; Foreign Students Now In

Reduced furlough fares on railroads, for military personnel traveling in uniform at their own expense, have been extended to March 31, 1954. They had been scheduled to expire January 31, 1954.

Meanwhile, the fares have been made available to foreign military students now on duty in the United States. There are approximately 9,000 such students currently training in this country.

These developments were announced by Earl B. Padrick, chairman of the Interterritorial Military Committee, who said that the extension to the foreign students was requested by the Secretary of Defense.

The furlough fares are round-trip coach rates on the basis of 2.025 cents per mile or less. They are exempt from the 15 per cent fare tax.

Final Phase of Class Rate Program at Hearing Stage

The Interstate Commerce Commission has opened hearings on the final phase of the long-pending uniform classification and class rate program. At a three-day session held December 1-3 in Washington, Western railroads presented the class rate proposals which they seek to apply in Mountain-Pacific Territory and on transcontinental traffic.

The Mountain-Pacific and transcontinental class rates would be applied in connection with the uniform classification which the commission prescribed in No. 28310. A uniform scale of class rates applicable east of the Rocky Mountains is already in effect, having been prescribed in No. 28300. Final determination of the Mountain-Pacific and transcontinental cases would thus round out the uniform classification-class rate program.

The Mountain-Pacific class rate proceeding is docketed as No. 30416, and the transcontinental case is No. 30660. Subsequent hearings in both cases will be held within Mountain-Pacific Territory, but no date for such hearings has mbeen set.

Pallets Transported Free in Britain

British Railways have begun to transport both loaded and empty pallets free of charge. Charges on palletized shipments are computed by deducting from the gross weight of the load the actual weight of pallets. However, depending upon the size of the pallet, a maximum deductible weight is specified by the railways; if the pallet weight exceeds that specified maximum, the extra weight is charged for. Allowable weights are 56 lb. for pallets 32 in. by 40 in., 32 in. by 48 in., 36 in. by 40 in., and 40 in. by 40 in.; and 84 lb. for pallets 40 in. by 48 in. and 40 in. by 60 in.

While experimenting with the handling of palletized traffic, the British Railways strengthened the floors of

COMMERCE DEPARTMENT INTERESTED IN A HEALTHY RAILROAD INDUSTRY, WEEKS TELLS NEW YORK RR CLUB

"The railroads make up an indispensable element of the nation's transportation network which supports our production in peace and permits rapid expansion to meet emergencies. A major function of the Department of Commerce is to promote the nation's commerce and industry and the transportation facilities which provide the circulatory system of our industrialized economy.

"The department has no direct regulatory responsibility for the railroads. However, it is actively interested in the results of such regulation. And in the event a threat arises to the maintenance of a financially strong railroad system, the department will call the situation to the attention of the appropriate government officials and agencies. For we know from experience that we can expect our various forms of transportation to meet the heavy demands of emergencies only if they are constantly maintained in sound operating and financial condition during peacetime.

"As the backbone of the nation's freight transportation system and an essential part of its passenger-carrying network, the railroads of the United States are an integral and vital part of defense preparedness. In the unfortunate event of new hostilities, the need for railroad transportation will be great—for the movement of troops and supplies, critical production, civil defense, and basic consumer necessities.

"Full utilization of productive facilities and the goods and services they provide requires maintenance of a high level of consumer expenditures. A financially healthy and efficient railroad system has an important role in making this possible, and, at the same time, depends upon a high level of business activity for its own prosperity. The Department of Commerce recognizes these needs; and in the administration of its transportation programs will strive to insure that each of the nation's transportation industries shall have a fair opportunity to share in a growing market."—*A special message to the New York Railroad Club from Commerce Secretary Sinclair Weeks on the occasion of the club's 81st anniversary dinner, December 10.*

cars handling such shipments and provided wide doorways at one end of each side of the car to facilitate loading and unloading. Seventy-two more such cars are being built to handle regular flows of palletized traffic. The cars are partitioned into sections to prevent the shifting of loads in transit.

Long Island Asks Higher Fares to Yield $2.8 Million

The Long Island has filed with the New York State Public Service Commission new tariffs providing for "cost-of-living" fare increases which, the railroad says, will cost the average commuter about a nickel a ride and permit immediate beginning of a major rehabilitation of all the railroad's passenger cars.

The tariffs, to be effective January 3, are based on a 14½ per cent increase in commutation fares to and from Flatbush avenue, Brooklyn, and an 11.6 per cent increase in commuter fares to and from Pennsylvania station, New York.

An additional tariff providing for an increase of three cents a ride in non-commutation fares will be filed with the commission shortly.

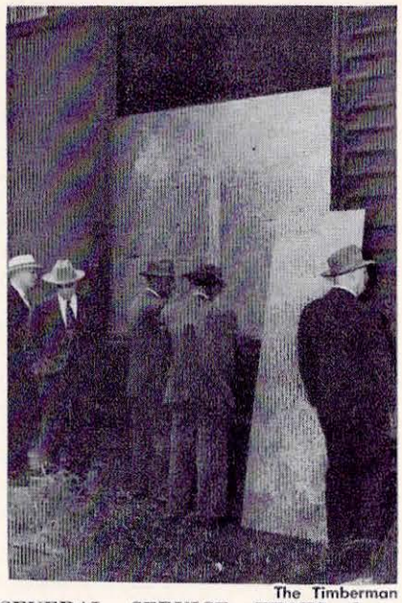
The proposed new fares are estimated to yield an additional $2,185,000 in commutation fares and $611,000 in non-commutation fares, for a total of $2,796,000.

In announcing the filing of the new fare schedules, LI Trustee William Wyer said: "Our last passenger fare increase (one cent a day for commuters and one cent a ride for single-fare passengers) in May 1952, was to enable us to pay an increase in wages which had been effective January 1 of that year. Since then, we have had several further increases in labor costs, most of them within the past six months, as a result of rises in the cost-of-living index. . ." These increases, plus an increase in electric power costs effective January 1, 1954, and other expenses, will result in a deficit of $2,725,000 for the 12-month period ending September 30, 1954, Mr Wyer added, explaining that, "We hope by the proposed fare adjustments to put ourselves in a position where we will just break even in 1954, assuming we have no further increases in costs, but without consideration of fixed interest on new equipment now in use or for property leases. . ."

Rehabilitation Program — Mr. Wyer said the railroad now has slightly more than $3,000,000 available from the recent sale of its Rockaway lines to New York City. This money is earmarked for the start of a six-year rehabilitation program, proposed about a year ago, which would involve purchase of 112 new cars and complete rebuilding and modernization of 554 existing passenger cars, with about 440 cars being disposed of (*Railway Age*, November 9, page 40).

(*Continued on next page*)

CONVEX SHAPE of the barricade unit is the secret of its light weight, great strength, and low cost.



The Timberman

SEVERAL SERVICE TESTS have demonstrated that this nail-free barricade will withstand switching shocks.

New Grain Door May Cut Grain Loss

Lower cost and improved utilization are claimed for new grain car door barricade

A new type of lightweight, stressed plywood grain car door barricade has been developed by the Wood Products Company, Portland 4, Ore. It is anticipated that its use will reduce the cost of grain doors per loaded movement, and at the same time curtail in-transit grain loss through leaking doors.

The new door is constructed of 5/16-in. unsanded, exterior sheathing grade plywood. The plywood panels are put in stress by means of a center block, with the ends of the panels firmly glued together. This makes each face of the door slightly convex. Each unit is 24 inches high, with only three units required to completely protect most doors.

The plywood units are placed across the inside of the door frame and fastened at the ends so that they may be readily slid upwards. They are not nailed to the car post. Special guides have been designed which will hold the units in place during loading—and which will prevent lateral displacement while in transit—or wide-head nails may be used immediately adjacent to the ends of each unit.

The new door units have been expressly designed to eliminate need for nailing in place. In many cases, an extra unit is nailed across the bottom of the average wood barricade to make sure the completed door will be strong enough. At the destination, where the grain is unloaded, it is impossible to remove the nails which hold the barricades in place because they are covered with grain. So the practice has grown of jacking the units upwards by means of levers or hydraulic jacks. This tears out the nails, and oftentimes weakens the unit, limiting its further use. Serious damage also may be done to the door posts. The plywood doors can be quickly and easily slid upwards without damage to the door frame or the barricade unit.

Tests have shown that the greatest outward pressure is exerted on grain door barricades at the bottom—where it amounts to about 1,000 lb. The new plywood door will withstand a pressure of over 3,200 lb., and will deflect a maximum of 1½ inches under loads up to 2,000 lb.

While the volume cost of the new door unit has not been determined, it appears likely that the initial cost of equipping one car will be slightly more than for the conventional double-course wood units now in common use.

The maker recognizes that it will be to the railroads' advantage to set up a system for returning the new doors to the owning line—as is done with the barricades used in merchandise cars—or for charging each line as the doors are moved from one road to the next. It is suggested that supporting racks might be built under the roof of each car so that doors and car can be kept together.

Given an adequate system of protecting ownership, it is expected the new door units will have a much longer useful service life than the average wood door. It is expected the lower cost of the new unit will make its use economically attractive in competition with low-cost substitute doors which have proved unsatisfactory because of breakage and leakage.

"We are anxious to use this money to start the rehabilitation," the trustee said, "but as long as we must anticipate a deficit of about $2,725,000 for the coming year, we are naturally loathe to use the Rockaway money and thus dissipate our only reserve fund from which the 1954 deficit could be met. If the fare increases proposed are approved promptly by the commission, however, we will be able to go forward immediately with the modernization program."

The present application has no connection with the recent recommendation of Interstate Commerce Commission Examiner Charles Gray that the LI be granted a 25 per cent commutation fare increase (*Railway Age*, December 7, page 12).

Air Force to Complete Freight Classification Guide

An 18-month program for completion of a freight classification guide which will "translate military supply language into descriptions listed in classification tariffs of rail and highway carriers," has been inaugurated by the Transportation and Packaging Division of the Air Material Command, at Wright-Patterson Air Force Base, Ohio.

About 70,000 of the approximately 740,000 active items contained in the Air Force supply catalog already have been included in such a guide. Responsibility for completing it as to the remaining items has now been delegated to the 15 Air Force depots. Each depot will develop proper tariff descriptions of items for which it has prime supply responsibility, so descriptions will be determined by people who stock the items and have the required technical information readily available.

Brig. Gen. J. L. Riley, chief of the division, estimates the completed guide will save the government $5 million a year in freight costs by eliminating incorrect shipping descriptions, and save many man-hours now spent in research by individual shippers.

T-M-K Board Asks Shippers To Replace DF-Car Bracing

"Too many shippers and receivers of freight have failed to replace and properly stow the loading and bracing equipment which goes with DF and other loader-equipped cars," the Trans-Missouri-Kansas Shippers Board reported at its meeting in Joplin, Mo., December 2 and 3. At the suggestion of its Loss and Damage Committee, the board passed a resolution requesting all users of loader-equipped cars to make a special effort to be sure all loading and bracing equipment is returned to the car and properly stowed. It also asked "that railroad management charge local agents with the responsibility of policing shipper compliance."

In reply to the question: "Will the container research laboratory maintained by the Association of American Railroads at Chicago be opened to shippers for training of their employees and solution of difficult packing problems," it was stated that "we want to educate railroad personnel first—when that program is complete, such a program may be developed."

POINT ST. CHARLES SHOPS (above) of the Canadian National in Montreal, were founded 100 years ago this year. Originally built at Longeuil, they were moved to their present site in 1857. Latest of a century-long series of improvements was the completion in 1950 of modern wheel and signal repair shops. Plans now call for doubling the size of the electric shop to handle the CNR's growing fleet of diesel locomotives.

People in the News

Nowell Is Acting Director Of Water, Forwarder Bureau

Lee R. Nowell is acting director of the Interstate Commerce Commission's Bureau of Water Carriers and Freight Forwarders. His appointment, effective November 27, followed the retirement of Charles R. Seal, former director of the bureau.

Education

American U. to Hold Sixth Traffic Institute

The Sixth Institute of Industrial Transportation and Traffic Management of the American University, Washington, D.C., will be held from January 12 to January 29, 1954. As in previous years, the institute will be directed by L. M. Homberger, professor of transportation at the university.

Rail Problems Studied In Indiana U. Theses

The School of Business of Indiana University (Bloomington, Ind.) has tabulated the theses completed within the past two years on the subject of transportation. Copies of most of the following, which deal with railroad matters, may be obtained by writing to L. L. Waters, professor of Transportation, at Bloomington:

"The Deficit from Passenger Operations on American Railroads," by Paul B. Blomgren.

"Steam and Railroads: A History," by Richard P. Hodgson.

"The Equitable Plan for the Leasing of Freight Cars," by Richard B. Howland.

"Railroad Freight Tariff Simplification," by Herbert H. Lynch.

"Problems and Economics of Dining Car Service," by David L. Paden.

"An Evaluation of the Express Business in the U. S. as Conducted by the Railway Express Agency, Inc.," by Wallace O. Yoder.

"The History and Economic Significance of the Chicago, Indianapolis &

Louisville Railway," by Leland S. Van Scoyoc.

"The Gulf, Mobile & Ohio; A Railroad That Had to Expand or Expire," by James H. Lemly (reviewed in the November 2 *Railway Age*, page 88).

Figures of the Week

October Net Off $9 Million

But cumulative net income for 10 months remained above 1952 by $110 million

Class I railroads in October had estimated net income, after interest and rentals, of $89,000,000, according to the Bureau of Railway Economics of the Association of American Railroads.

This compared with net income of $98,000,000 in the same month last year.

Net railway operating income, before interest and rentals, amounted to $107,331,352 in October. The comparable figure for October 1952 was $120,997,876.

Estimated results for the first 10 months of this year showed net income of $740,000,000, compared with $630,000,000 in the same period of 1952. Net railway operating income amounted to $952,692,110, compared with $856,877,240.

In the 12 months ended October 31, the rate of return averaged 4.45 per cent, compared with 4.14 per cent for the 12 months ended October 31, 1952.

Gross in the first 10 months of 1953 amounted to $9,016,553,959 compared with $8,738,507,372 in the same period of 1952, an increase of 3.2 per cent. Operating expenses amounted to $6,780,942,483 compared with $6,680,564,078, an increase of 1.5 per cent.

Fourteen Class I roads failed to earn interest and rentals in the first 10 months of 1953, of which eight were in the Eastern district, two in the Southern region, and four in the Western district.

CLASS I RAILROADS—UNITED STATES

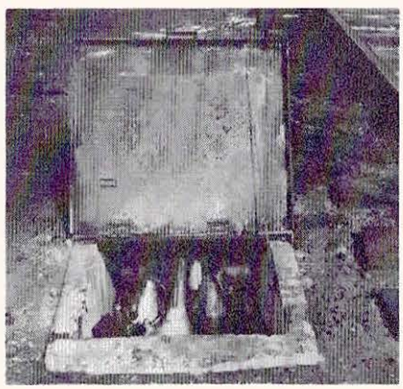
	Month of October 1953	1952
Total operating revenues	$934,303,702	$985,230,717
Total operating expenses	693,896,298	707,499,439
Operating ratio—per cent	74.27	71.81
Taxes	112,698,177	139,492,963
Net railway operating income (Earnings before charges)	107,331,352	120,997,876
Net income, after charges (estimated)	89,000,000	98,000,000
Ten Months Ended October 31		
Total operating revenues	$9,016,553,959	$8,738,507,372
Total operating expenses	6,780,942,483	6,680,564,078
Operating ratio—per cent	75.21	76.45
Taxes	1,085,573,098	1,048,218,626
Net railway operating income (Earnings before charges)	952,692,110	856,877,240
Net income, after charges (estimated)	740,000,000	630,000,000

HOW CONCRETE BOXES CUT YARD DELAYS

Yard train delays caused by journal box oiling are reduced on the Frisco at St. Louis by a series of strategically located concrete storage bins for oil cans and jacking equipment. The bins are spaced every 250 ft., or five car lengths, along the outbound inspection track. They serve as a point for the oilers to exchange an empty oil can for a full one without stopping to take the time to refill.

The 250-ft. spacing was chosen because the two-gallon cans hold enough oil for about five cars on one side. Thus the oiler passes one of the boxes at just about the time that his oil can becomes empty. He leaves the empty can in the box and takes out a full one, oils the next five cars, repeats the exchange, and continues this procedure until all journal boxes have been oiled. The empty cans which were left in the bins are filled between trains when the oilers have time to spare.

The boxes are 2 ft. wide, 2½ ft. deep and 4 ft. long. They hold ten oil cans, a journal jack, wheel iron and jacking blocks. A two-part steel cover, hinged in the center, is painted yellow for night visibility. The cans are filled from 8,000-gal. tanks at each end of the yard.



FASTER JOURNAL BOX OILING is obtained by the Frisco with these concrete storage bins along outbound yard tracks.

Freight Car Loadings

Loadings of revenue freight in the week ended December 5 totaled 662,035 cars, the Association of American Railroads announced on December 10. This was an increase of 65,805 cars, or 11 per cent, compared with the previous Thanksgiving holiday week; a decrease of 57,289 cars, or 8 per cent, compared with the corresponding week last year; and a decrease of 111,495 cars, or 14.4 per cent, compared with the equivalent 1951 week.

Loadings of revenue freight for the week ended November 28, which included the Thanksgiving Day holiday, totaled 596,230 cars; the summary for that week, compiled by the Car Service Division, A. A. R., follows:

REVENUE FREIGHT CAR LOADINGS

For the week ended Saturday, November 28

District	1953	1952	1951
Eastern	98,426	112,156	138,390
Allegheny	120,681	141,919	167,691
Pocahontas	41,289	51,427	66,956
Southern	106,371	116,281	140,802
Northwestern	72,425	88,405	105,074
Central Western	105,501	170,424	136,051
Southwestern	51,537	52,759	66,812
Total Western Districts	229,463	248,588	307,937
Total All Roads	596,230	670,371	821,776
Commodities:			
Grain and grain products	38,061	38,985	58,694
Livestock	8,804	8,991	10,950
Coal	105,204	126,669	175,456
Coke	10,594	14,477	16,974
Forest products	36,018	39,297	47,556
Ore	24,715	43,455	41,672
Merchandise l.c.l.	56,311	62,111	73,669
Miscellaneous	316,523	336,386	396,805
November 28	596,230	670,371	821,776
November 21	725,732	811,073	711,447
November 14	727,058	828,750	814,258
November 7	747,868	829,295	791,403
October 31	780,863	862,116	837,617
Cumulative total 48 weeks	35,889,366	35,313,399	37,799,088

In Canada.—Carloadings for the seven-day period ended November 21 totaled 80,729 cars, compared with 78,234 cars for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
November 21, 1953	80,729	29,075
November 21, 1952	85,855	32,284
Cumulative Totals		
November 21, 1953	3,602,050	1,462,084
November 21, 1952	3,731,443	1,561,084

Competitive Transport

C.A.B. Claims Power to Let "Non-Scheds" Carry Mail

The Civil Aeronautics Board has ruled that it has authority to authorize transportation of mail by air carriers not holding certificates of public convenience and necessity and to fix the rates for such service.

The ruling amounted to an interpretation of the Civil Aeronautics Act's sections 406 and 416(b). The board emphasized that it dealt only with the legal question of whether or not it is essential for an air carrier to be a holder of a certificate before it is permitted to transport mail.

The question arose last September, when the Post Office Department started its New York-Chicago and Washington-Chicago experiments in moving three-cent, first-class mail by air. The business has been given to the regularly scheduled, certificated air lines, but some of the noncertificated carriers have applied to C.A.B. for authority to participate. Those applications remain pending. The question of whether the applicants have made the showing required by the act "is under consideration and not here decided," the board said in its present report.

Organizations

A.S.M.E. Railroad Division Installs New Officers

At the annual luncheon of the Railroad Division, during the annual meeting of the American Society of Mechanical Engineers, in New York December 3, the retiring chairman, G. W. Bohannon, turned over the gavel to E. M. Van Winkle, vice-president, American Steel Foundries, New York, who was elected chairman for 1954.

Other Executive Committee members for the year are C. K. Steins, mechanical engineer, Pennsylvania; J. S. Newton, vice-president, engineering, Baldwin-Lima-Hamilton Corporation; A. G. Hoppe, mechanical engineer, Chicago, Milwaukee, St. Paul & Pacific, and T. F. Perkinson, manager, Transportation Engineering division, General Electric Company. E. L. Woodward, western mechanical editor, *Railway Age*, continues as secretary.

New members of the General Committee are G. L. Cotter, director of engineering, Westinghouse Air Brake Company; P. V. Garin, engineer of tests, Southern Pacific, and Charles Kerr, consulting transportation engineer, Westinghouse Electric Corporation.

A MAN OF MANY TALENTS—this Mr. S. Claus! As two of his tiny admirers watch, he steps down from the cab of a Chicago & Eastern Illinois locomotive that pulled a train of some 300 children into Chicago the other day. And where were the children going in Chicago? To see Santa's annual Christmas parade, of course! No question about it, their hero really does get around.

Coordinated Mechanical Associations Exhibit

The Coordinated Mechanical Associations' conventions, to be held at the Hotel Sherman, Chicago, September 13-15, 1954, will be accompanied by an exhibit of railway equipment and supplies. The exhibit, sponsored by the Allied Railway Supply Association, will be opened Sunday afternoon, September 12, for the benefit of early arrivals.

The next regular meeting of the **Atlantic States Shippers Advisory Board** will be held in the Mayflower Hotel, Washington, D. C., January 6-7. Edmund F. Mansure, administrator, General Services Administration, Washington, D.C., will be the speaker at a special luncheon, sponsored jointly with the **Traffic Club of Washington,** at 12:30 p.m., January 7.

The annual meeting of the **Transportation Association of America** will be held in Chicago next January 20. Guest speaker at the luncheon will be Donald K. David, dean of the Harvard School of Business Administration. The association's board of directors will meet on the afternoon of January 20 and throughout the following day.

At a joint meeting of the **Lexington Group** (informal organization of persons interested in railroad history) and the **American Historical Association,** to be held in Chicago December 29, Ralph Budd, chairman of the Chicago Transit Authority and former president of the Burlington, will speak on "Brazilian Railways; Past, Present and Future." He will share the podium with Dr. Fred J. Ripley, of the University of Chicago, an authority on foreign investments in Latin America. The joint meeting will be presided over by Dr. Stanley Berge, professor of transportation, Northwestern University.

Mr. Budd's talk will be based upon his personal experiences and findings in Brazil while acting as consultant to the joint Brazil-U.S. Commission (*Railway Age*, December 8, 1952, page 14).

At a recent annual election of officers of the **Transportation Club of Santa Clara County** (Cal.), J. W. Ostle, vice-president, First National Bank of San Jose, was elected president for 1954, and J. W. McCann, district freight agent, Southern Pacific, vice-president. R. M. Ritchey was reelected secretary-treasurer.

The **Northwest Carmen's Association** has elected the following new officers: President—C. B. Stemple, assistant superintendent car department, Chicago & North Western; vice-presidents—J. F. Likarish, master car builder, Great Northern; W. J. Weatherall, district general car foreman, Milwaukee; and H. E. Brakke, assistant superintendent car department, Northern Pacific; and secretary-treasurer—N. J. Maglich, general car foreman, Minnesota Transfer.

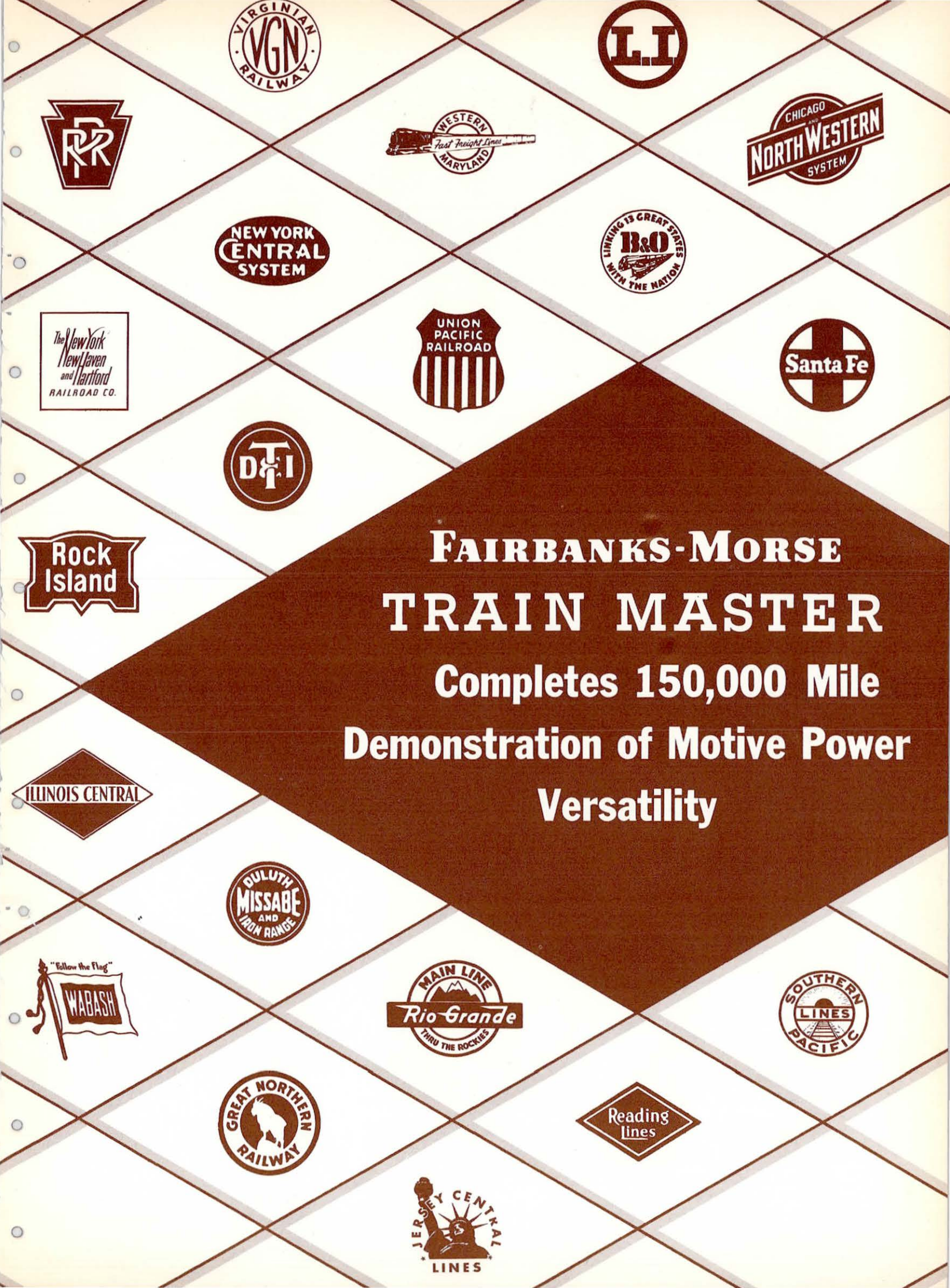
The **Traffic Club of New York** has elected the following new officers: President, John P. Dennis, traffic manager, Texas Company; first vice-president, Joseph L. Seiler, United States Trucking Corporation; and second vice-president, E. A. O'Brien, Union Carbide & Carbon Corp.

A joint meeting of **Railroad Enthusiasts,** New York division; the **Railway & Locomotive Historical Society,** and the **Electric Railroaders Association,** will be held at 8 p.m., December 18, in the Y.M.C.A. auditorium, Pennsylvania Station, New York. Earl W. Errickson, general foreman in the office of electrical engineer of the Pennsylvania, will speak on "Speed Control on the Pennsylvania."

Curtis M. Hutchins, chairman and president of the Bangor & Aroostook, has been elected president of the **New England Council.**

The **Metropolitan Traffic Association of New York** will hold a dinner dance at the Hotel Commodore, New York, February 27, and its annual dinner April 29, at the same hotel.

Newly elected officers of the **Railway Electric Supply Manufacturers Association** are: President, E. K. Goldschmidt, Safety Car Heating &
(*Continued on page* 120)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RAILWAY
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MARYLAND
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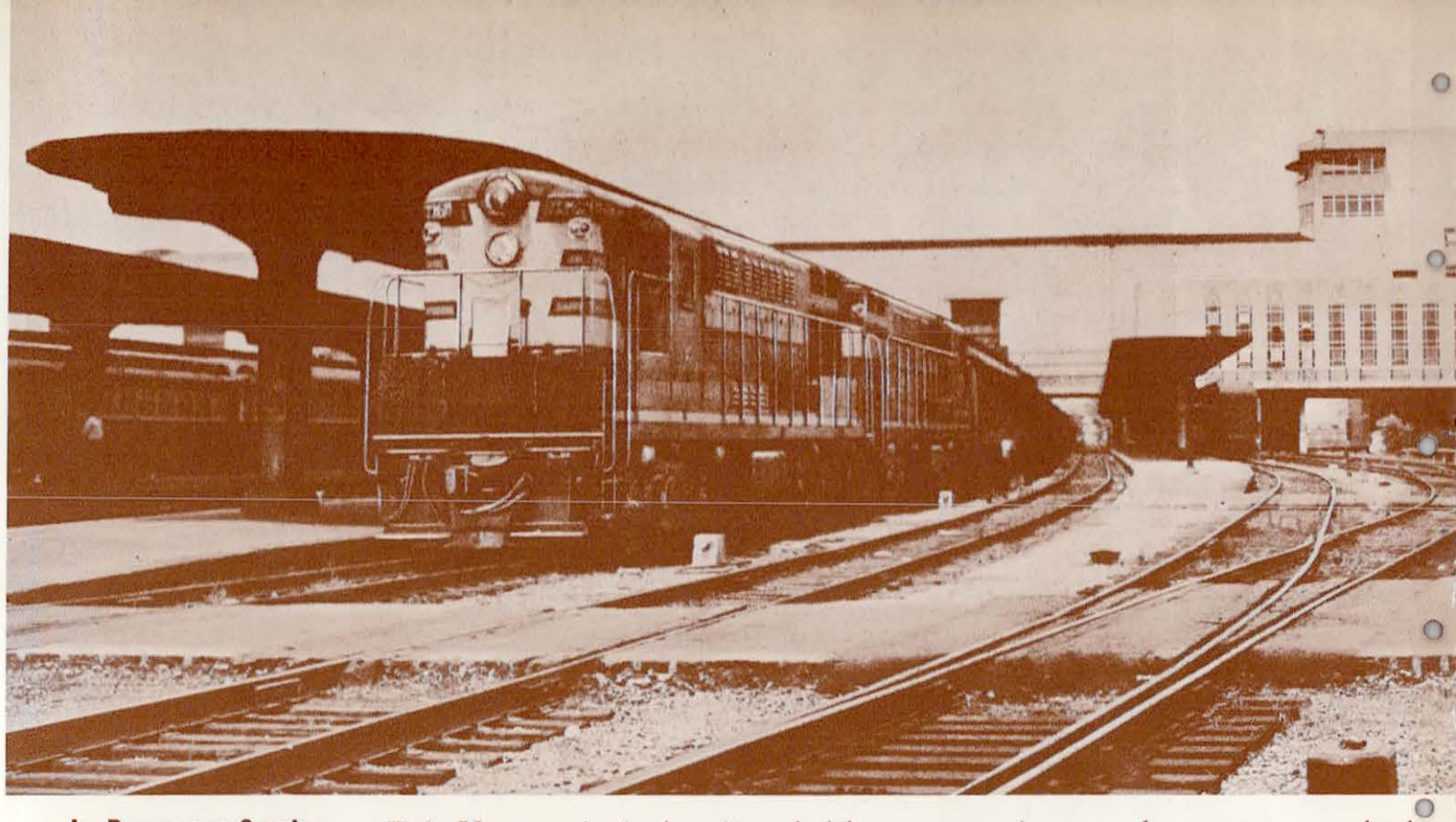
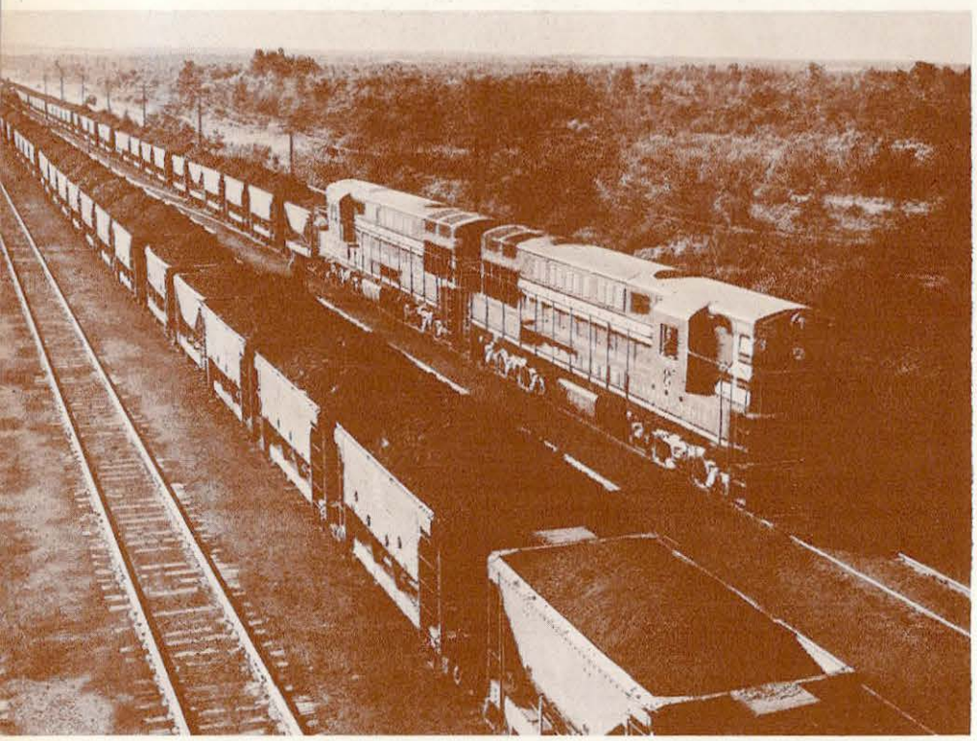
AND
NORTH WESTERN
SYSTEM
NEW YORK
CENTRAL
SYSTEM
LINKING 13 GREAT STATES
B&O
WITH THE NATION
The New York New Haven and Hartford
RAILROAD CO.
UNION
PACIFIC
RAILROAD
Santa Fe
D&I
Rock
Island
FAIRBANKS-MORSE
TRAIN MASTER
Completes 150,000 Mile
Demonstration of Motive Power
Versatility
ILLINOIS CENTRAL
DULUTH
MISSABE
AND
IRON RANGE
"Follow the Flag"
WABASH
MAIN LINE
Rio Grande
THRU THE ROCKIES
SOUTHERN
LINES
PACIFIC
GREAT NORTHERN
RAILWAY
Reading
lines
JERSEY CENTRAL
LINES



In Passenger Service . . . Train Masters maintained on-time schedules on name trains across the country . . . on locals and passenger extras. Train Master performance *proved* their ability to handle this service.

Tomorrow's Motive

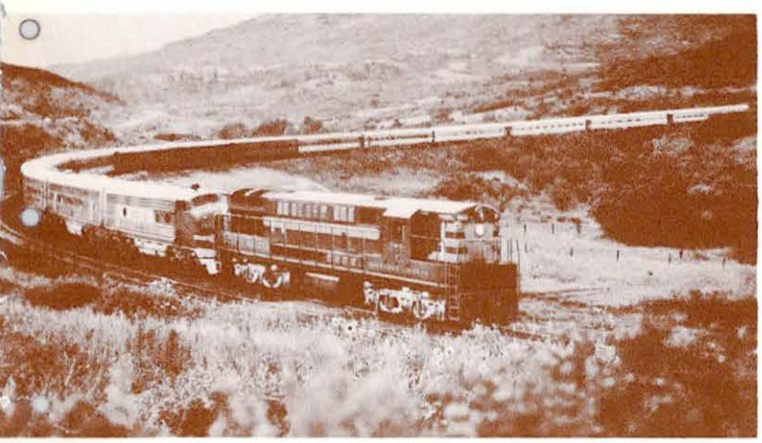


Hauling Heavy Drags . . . as here on the Mesabi Range showed the power and rugged stamina of the world's most powerful single-diesel locomotive on the rails today. Train Master Performance *proved* that Opposed Piston Diesel power and TM versatility is the right combination for all heavy-duty service.

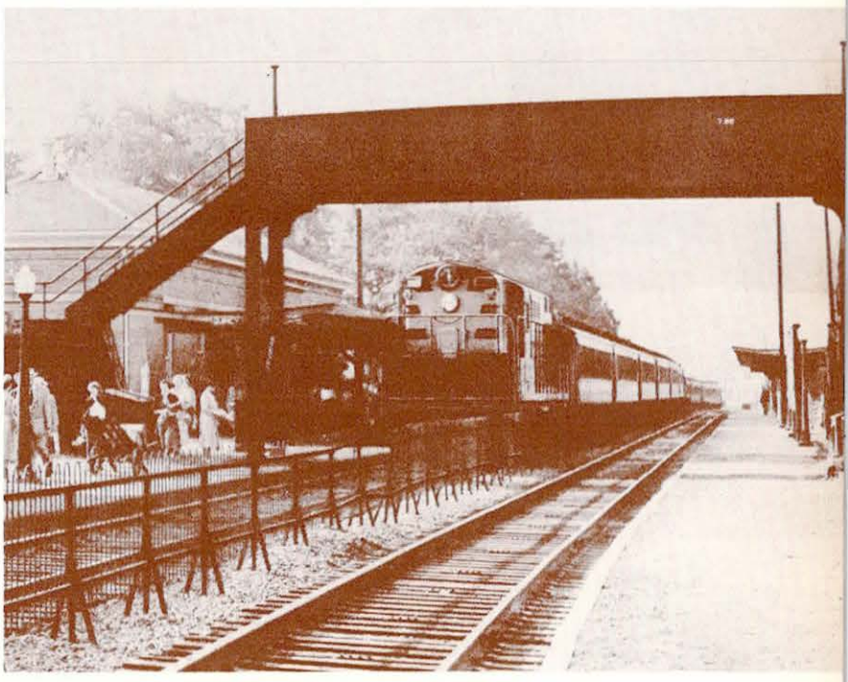
Pulling Heavy Freight . . . Train Master demonstrated that its high tractive effort on the upgrade and high dynamic braking on the downgrade could haul and effectively control high tonnages. Upgrade or down, Train Master's performance proved that this locomotive is always master of its train.

On-Time Freight . . . where every railroad saw TM power move higher tonnages faster over steep grades in difficult territories. Train Master performance *proved* that higher ton-miles per train-hour can be scheduled *now*.

Power TODAY



In Helper Service . . . Such is the versatility of the Train Master that even this service is an ideal application. Train Master performance *proved* its ability at helper stations as elsewhere on the road.



On Suburban Runs . . . Train Master's fast acceleration and power helped keep the tightest scheduled runs and turn-arounds on schedule. Again, Train Master performance *proved* its ability to solve another difficult motive power problem.

PERFORMANCE PROVED

FAIRBANKS-MORSE
TRAIN MASTER
the most useful locomotive ever built

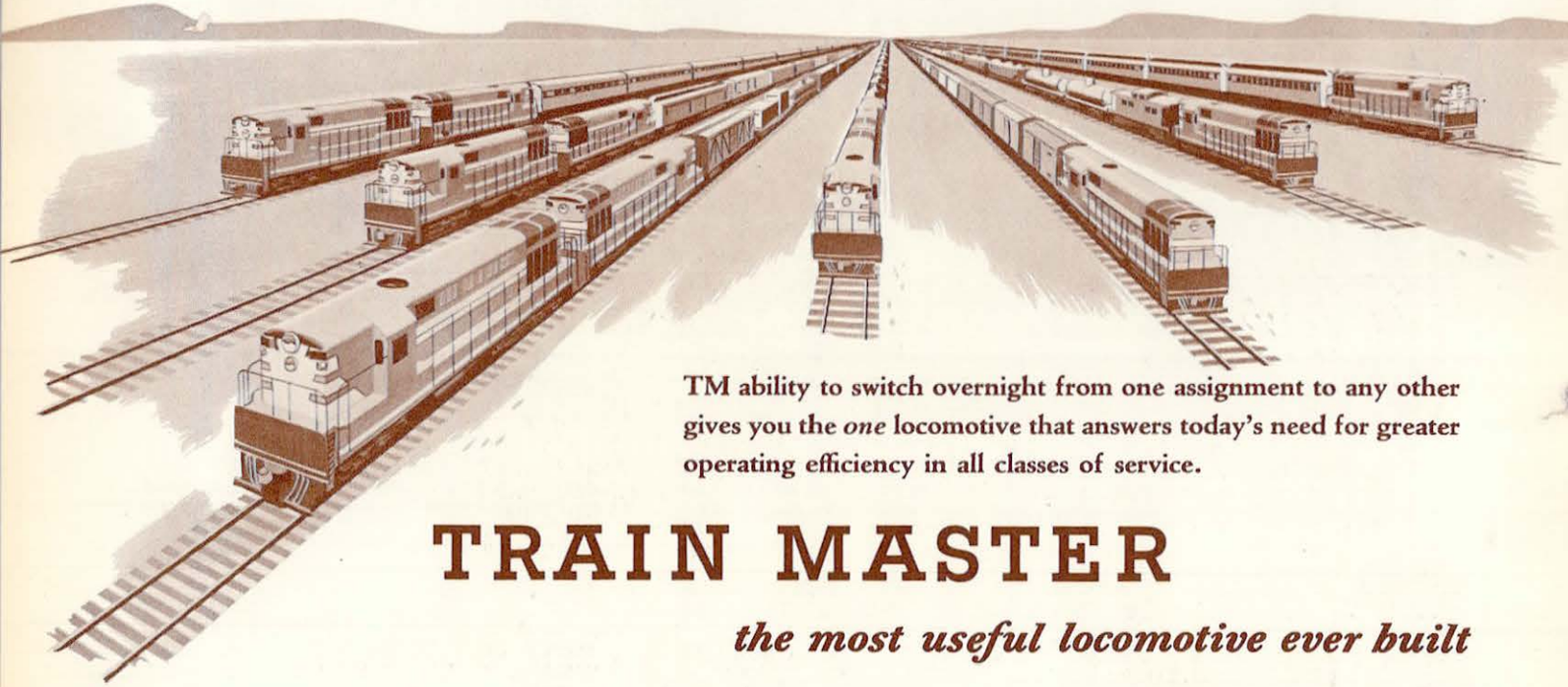
150,000 Miles of Proof

Nowhere else than on the rails can you prove the worth of a new concept in motive power design. After eight months of demonstration in every type of service, over many of the country's toughest territories—Train Master performance has proved that the combination of . . .

POWER	CAPACITY	WEIGHT	BRAKING	HEATING
2400 horsepower of Fairbanks-Morse Opposed Piston Diesel power	Six heavy-duty, high-capacity traction motors	Total weight of 375,000 pounds —all on drivers	3000 horsepower Dynamic Brake	4500 lb/hr steam generator

. . . makes the TRAIN MASTER ideally suited for . . .

Passenger . . . Mail and Express . . . Fast Freight . . . Drag Freight . . . Hump and Yard . . . Helper . . . Extra Service.



TM ability to switch overnight from one assignment to any other gives you the *one* locomotive that answers today's need for greater operating efficiency in all classes of service.

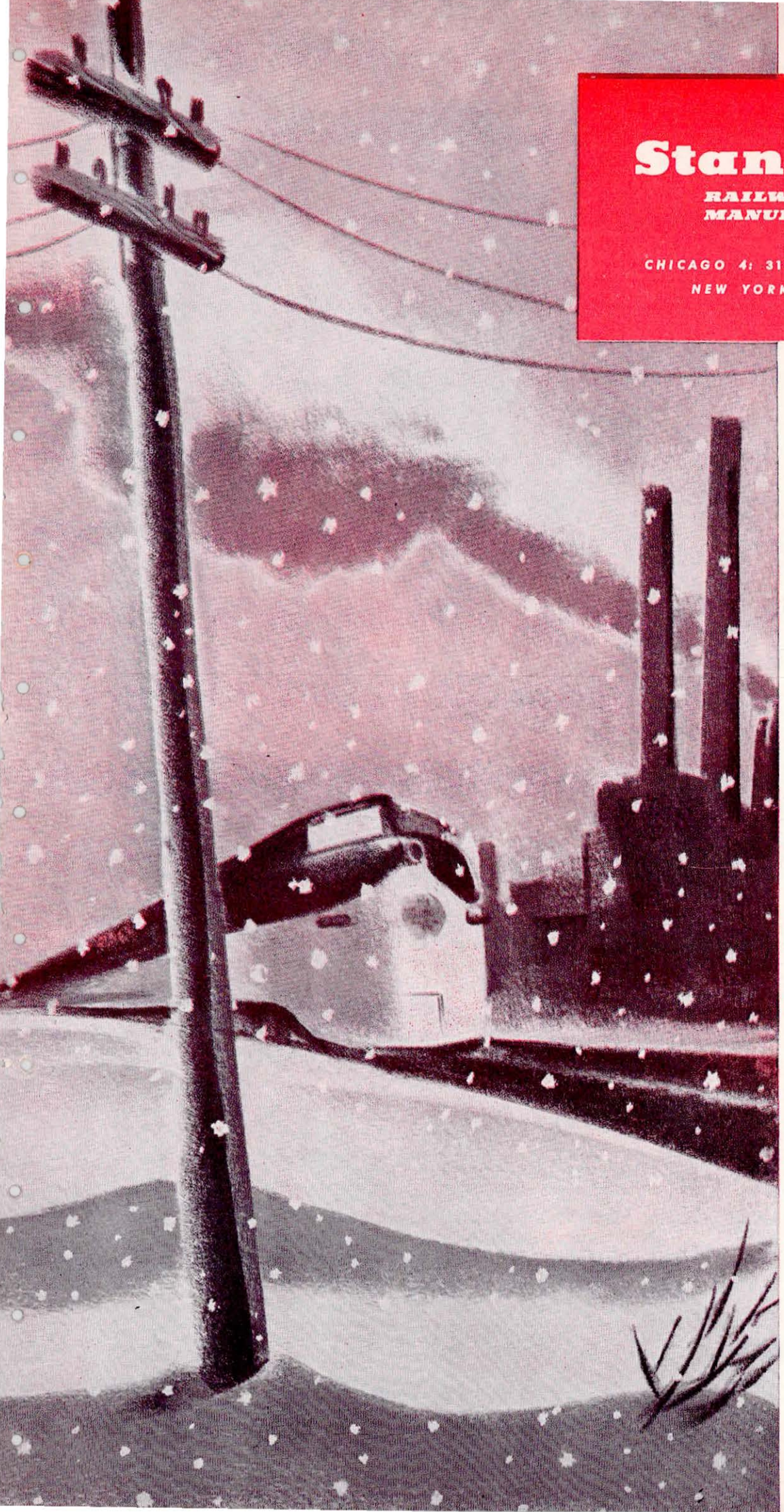
TRAIN MASTER

the most useful locomotive ever built

FAIRBANKS-MORSE

a name worth remembering when you want the best

DIESEL LOCOMOTIVES AND ENGINES • RAIL CARS AND RAILROAD EQUIPMENT • ELECTRICAL MACHINERY • PUMPS • SCALES
WATER SERVICE EQUIPMENT • HAMMER MILLS • MAGNETOS



Standard
RAILWAY EQUIPMENT
MANUFACTURING COMPANY

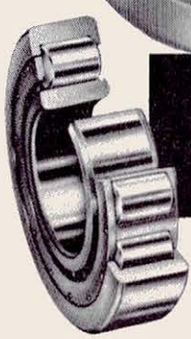
CHICAGO 4: 310 SOUTH MICHIGAN AVENUE
NEW YORK 17: 247 PARK AVENUE

wishes you a

VERY MERRY CHRISTMAS

and a

HAPPY NEW YEAR



THE TRACTION MOTOR BEARING PIONEER STILL LEADS

Now, It's SKF's M-2 Cage, Providing Easy Inspection Of All Bearing Surfaces

It's the easiest thing in the world to disassemble SKF's *Pinion End Traction Motor Bearings* for inspection; just slide out the inner ring. You can then move the rollers out of the outer ring groove, and rollers and M-2 Cage slide right out. Reassembly is just as easy.

This roller riding cage has another advantage – it is easier to lubricate.

Crowned rollers provide maximum capacity in minimum space.

HERE IS SKF'S COMMUTATOR END CYLINDRICAL ROLLER BEARING

It, too, has SKF's M-2 Roller Riding Cage for easy disassembly and inspection.

Crowned rollers provide maximum capacity in minimum space. Positively stabilizes the armature and holds it in proper position in the motor frame. 7442

Specialized SKF Distributors, strategically located, have adequate stocks of SKF Traction Motor and Generator Bearings. They can make immediate deliveries from stock.

SKF INDUSTRIES, INC., PHILADELPHIA 32, PA.

— manufacturers of **SKF** *and* HESS-BRIGHT *bearings.*

SKF®

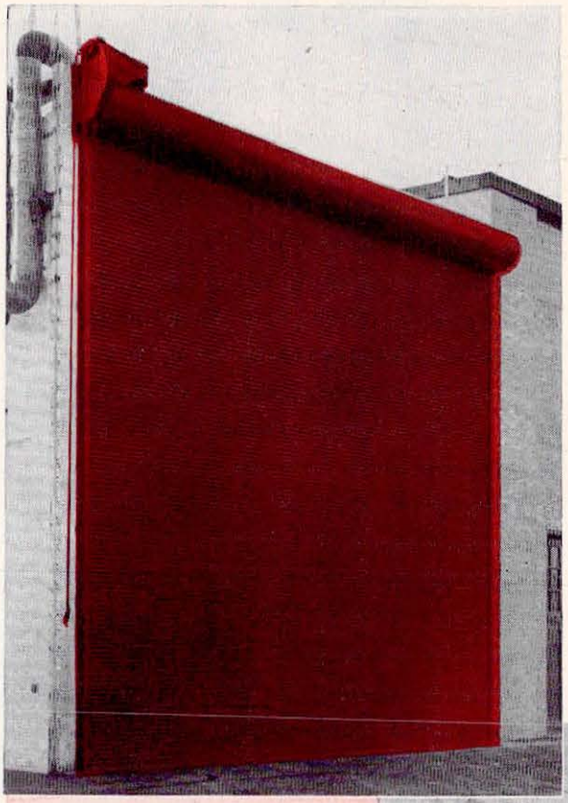
TRACTION MOTOR BEARINGS

SKF Pioneered These Traction Motor Bearing Developments . . .

- **1939** Crowned Rollers which increased capacity.
- **1943** Assisted Railroads in developing "SEALED GREASE LUBRICATION".
- **1945** Larger, longer rollers.
- **1948** Cage re-design to provide easy disassembly and reassembly.
- **1952** Longer life M-2 Cage, roller centered, while retaining all previous improvements. Sealed grease lubrication runs up to 500,000 miles without attention.

Rolling Steel Doors

. . . more desirable from ANY STANDPOINT!



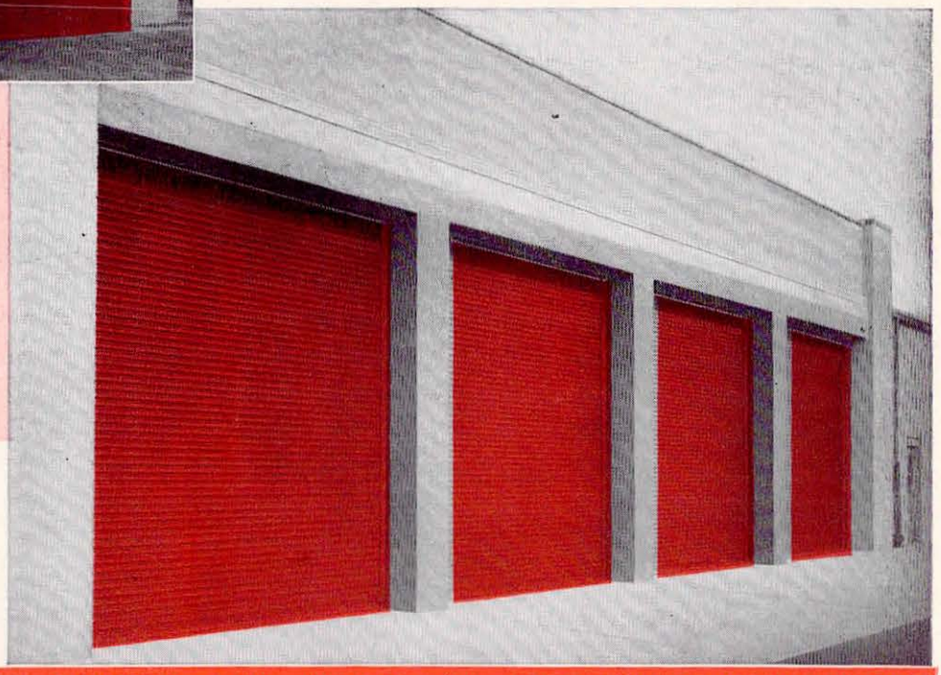
For unusual openings, such as the one at the left, and normal truck openings in any type of building, there is no door that offers as many desirable features as a good quick-opening, quick-closing, power operated rolling steel door. Their vertical, roll-up action occupies no usable space either inside or outside the door opening—no overhead obstructions to interfere with crane operations. No other type of door offers these inherent advantages of space economy and compactness in operation. In addition, rolling steel doors are permanent . . . their all-metal construction assures you a lifetime of continuous trouble-free service, and provides maximum security against intrusion and fire. When you select a rolling steel door, it will pay you to check the specifications carefully . . . you will find that the galvanized steel material for the interlocking curtain slats of Mahon Rolling Steel Doors is chemically cleaned, phosphated, and treated with a chromic acid solution to provide paint bond, and, that the protective coating of synthetic enamel is baked on at 350° F. prior to roll-forming. This is just one of the extra-value features of Mahon Rolling Steel Doors—you will find others. See Sweet's Files for complete information including Specifications, or write for Catalog No. G-54.

THE R. C. MAHON COMPANY

Detroit 34, Michigan • Chicago 4, Illinois • Representatives in all Principal Cities

Manufacturers of Rolling Steel Doors, Grilles, and Automatic Closing Underwriters' Labeled Rolling Steel Doors and Fire Shutters; Insulated Metal Walls and Wall Panels; Steel Deck for Roofs, Partitions, and Permanent Concrete Floor Forms.

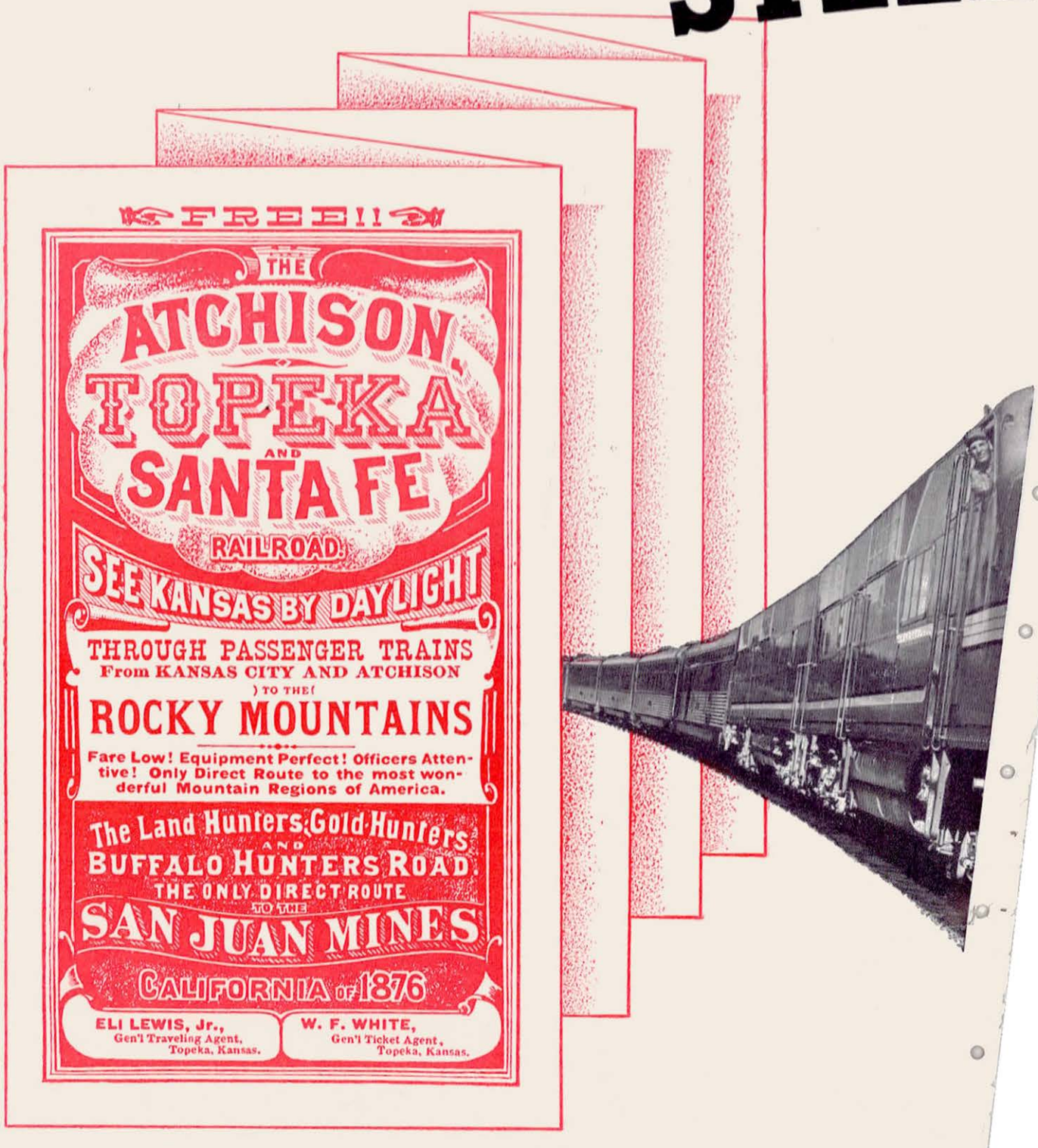
Above you see one of two Mahon Power Operated Rolling Steel Doors 30'-0" x 30'-0" installed in a General Electric Test Cell. At right are four Mahon Power Operated Rolling Steel Doors installed in truck openings of an enclosed shipping dock in a new plant for the Detroit Hardware Company.



ROLLING STEEL DOORS, SHUTTERS AND GRILLES TO MEET EVERY REQUIREMENT

MAHON

STEEL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THE
ATCHISON,
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SEE KANSAS BY DAYLIGHT
THROUGH PASSENGER TRAINS
From KANSAS CITY AND ATCHISON
TO THE
ROCKY MOUNTAINS
Fare Low! Equipment Perfect! Officers Attentive! Only Direct Route to the most wonderful Mountain Regions of America.
The Land Hunters, Gold Hunters
AND
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THE ONLY DIRECT ROUTE
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RAILS and PIONEERING

CF&I

Santa Fe

For more than seventy years Santa Fe Trains have been traveling western trails on CF&I rails. Today, as in the past, many of the rails and accessories used by the Atchison, Topeka and Santa Fe are produced in the CF&I rail mill at Pueblo, Colorado.

CF&I with Santa Fe is proud of the part it has played in developing the fast, modern arteries of transportation that serve the Western Empire.

Modern railroading demands increased loads, greater speeds, safety and efficiency. CF&I employs engineering and production skills to meet these demands. Santa Fe's continued acceptance of our material is a recognition of CF&I's dependability and quality of products for the railroad industry.

2037

THE COLORADO FUEL AND IRON CORPORATION

DENVER, COLORADO

CF&I

M.&St.L.

Modern & STream Lined

The Minneapolis & St. Louis in 1953 is a completely modern Railway, staffed and equipped for its specialized job:

Fast Freight Service in the Great Midwest

Under the present management, the M. & St. L. has been rebuilt, physically and financially, in the past 18 years.

SOME FACTS ABOUT THE M. & ST. L.

Locomotives: all the new and more efficient Diesels, 73 units.

Freight Cars: 4,000, nearly all new since 1944.

New Depots, Shops and Bridges: scores of old structures replaced.

Major Projects: new general office in Minneapolis and three Diesel service buildings.

Yards and Shops: rebuilt and modernized at Minneapolis, Marshalltown and other terminals.

All Improvements: paid for or being paid for from earnings.

The M. & St. L. is one of the few railroads without bonded debt. Only capital is 600,000 shares of common stock.

Since 1935, operating revenue has tripled, totaling $22,901,000 in 1952.

Employes number about 2,800. Total payroll, $11,403,000 in 1952, nearly three times that of 1935.

Taxes totaled $2,861,000 in 1952, paid to federal, state and local governments, equal to $4.77 per share of stock.

The M. & St. L. operates 1,397 miles of main track: 399 in Minnesota; 155 in South Dakota; 753 in Iowa and 89 in Illinois. Serves 225 cities and towns.

Constant program of industrial development has located several hundred new industries on M. & St. L. lines, creating additional freight traffic.

Traffic department, strongly staffed and operating 36 offices throughout the U. S., works aggressively to secure freight, including "bridge line" traffic from connecting roads as well as shipments to and from points on line.

THE GOAL OF THE M. & ST. L.

To provide ever-better Freight Service to the Communities it serves, to Agriculture, Business and Industry and to Connecting Railroads; thus contributing to Progress and Prosperity of its Midwest Territory, expanding its own Traffic and Revenues and making possible the payment of Liberal Dividends to Owners of its Stock.

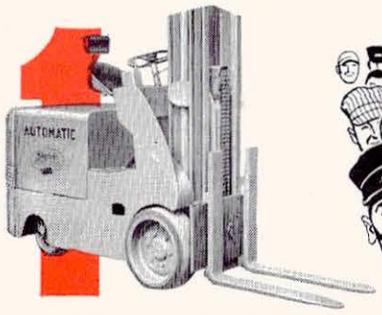
The **MINNEAPOLIS & ST. LOUIS** *Railway*

Modern & STream Lined Freight Service

THE MINNEAPOLIS & ST. LOUIS RAILWAY CO. — THE PEORIA GATEWAY

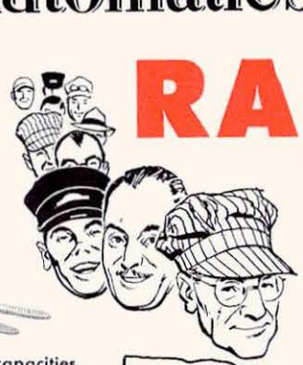
5 Big Reasons

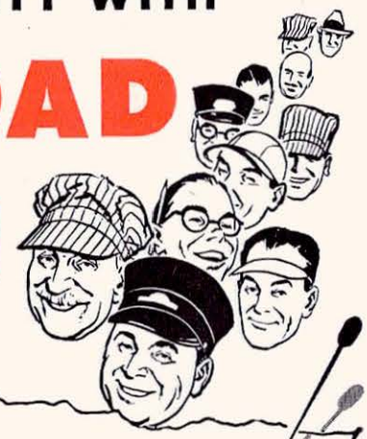
FOR Automatic's POPULARITY WITH RAILROAD MEN



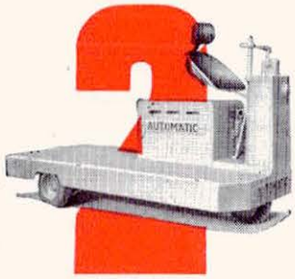
1

SKYLIFT—BF model is furnished in capacities from 1,500 pounds to 4,000 pounds, rated for loads up to 48″ long. With a collapsed height of 83″, telescopic lift is 132″ and single lift 68″.





Automatic offers the widest selection of electric-driven industrial trucks for Railway purposes

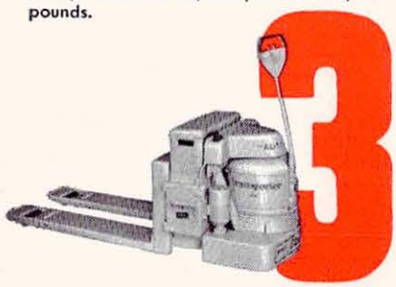


2

LOAD CARRYING PLATFORM TRUCK—FP-20. All-purpose platform trucks with large area fixed platform, for variety loading or freight transfer, can be supplied in capacities from 2,000 pounds to 6,000 pounds.

4

TRANSVEYOR (Stacker Truck)—4,000 lbs. capacity. Short, compact, maneuverable...for operation in narrow and congested areas. Has exclusive Balanced Action! This center-pivoted feature eliminates frame distortion and equalizes load. Drive and idler wheel are connected by tie-rod and steer simultaneously.



3

TRANSPORTER (Pallet). Both 4,000 pound and 6,000 pound capacity models of the pallet type "101" Transporter are furnished with forks from 30″ long and up in 2″ steps, suitable for use with open face or double face pallets. Width over forks is 27″.

Mail Coupon Today

for more information on these and other "railway-keyed" Automatic trucks.

5

TRACTOR—On FT-E Center Control model driver sits while on FT-E end control model driver stands at rear. Either will draw trailer load of 14,000 pounds all day, or up to 38,000 pounds short distances, intermittently. Normal drawbar pull capacity of both types is 250 pounds, with an ultimate of 950 pounds.

Automatic®

WORLD'S LARGEST EXCLUSIVE BUILDER OF ELECTRIC-DRIVEN INDUSTRIAL TRUCKS

Automatic 85 W. 87th Dept. X-3 Chicago 20, Illinois

Please send complete facts on Automatic electric-driven industrial trucks for Railway purposes.

*Company Name*_____

*By*_____ *Title*_____

*Street Address*_____

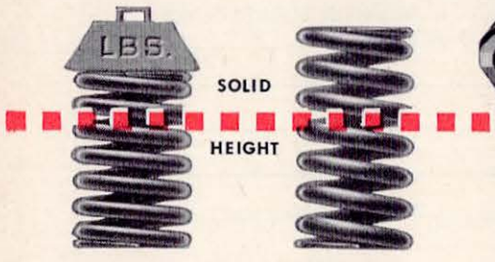
*City*_____ *Zone*____ *State*_____

They're making older

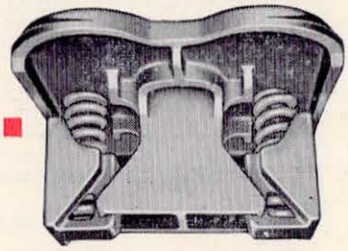
Santa Fe Reefer being brought up to modern riding standards. This car is one of thousands that have been equipped with smooth-riding ASF Ride Control Packages. Installation is simple: just jack up the bolster, pull all the old short-travel springs, slip in the Ride Control Package.

Why a small per-car investment in Ride Control Packages can pay you big returns

SMOOTH, SAFE RIDING AT SPEEDS TO 100 MPH



Long-travel springs . . . for soft, impact-absorbing spring action, whether the car is empty or fully loaded. Your choice of 2½" or 3" spring travel.

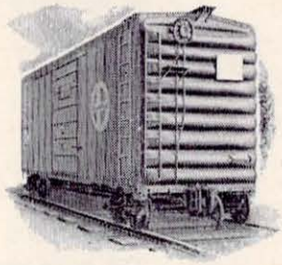


Constant friction control . . . prevents harmonic oscillation of springs. Induction-hardened friction surfaces *keep* it constant —for years of service.

FEWER LADING DAMAGE CLAIMS

The inevitable result of a smoother riding freight car is greater protection of lading —especially when running in modern speed ranges.

LOWER MAINTENANCE COSTS



The car that rides smoother is the car that requires less maintenance and fewer repairs. And, even the roadbed stands up longer!

On the Santa Fe, a continuous program of modernization adds weight to the slogan, "Ship Santa Fe all the way." Here's how

cars ride better than ever!

The Santa Fe repair program offers a good example of how older freight cars can be brought up to modern riding standards—at costs which are soon written off.

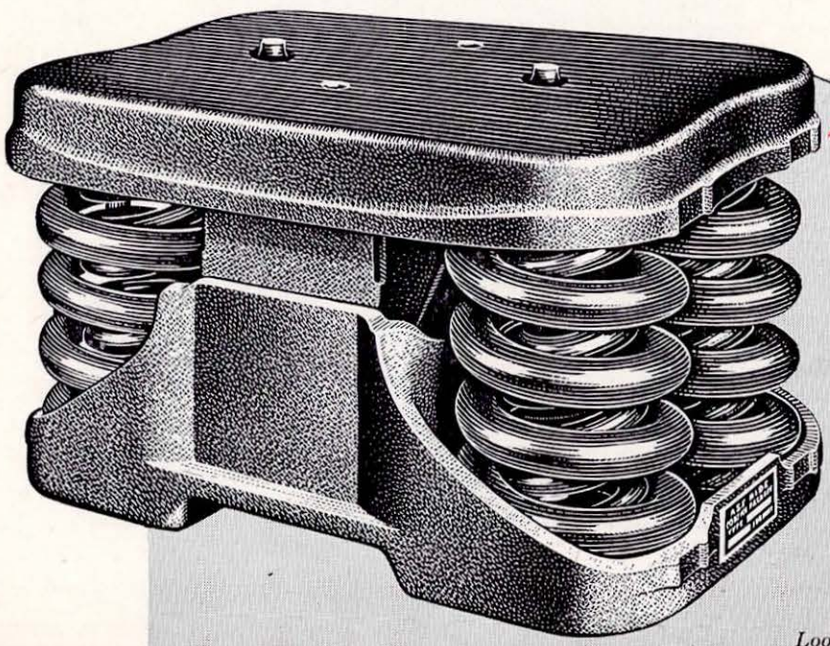
During scheduled repairs, the Santa Fe has equipped 4271 reefers and 983 50-ton box cars with ASF Ride Control® Packages, the self-contained units with built-in long-travel springs, *constantly controlled* by induction-hardened friction surfaces.

Standard procedure, as cars are shopped, is to first check the condition of the trucks. If side frames and bolsters don't meet AAR standards, they are replaced with ASF Ride Control Trucks. But in the thousands of cases where trucks are up to standard, the old short-travel spring groups are simply replaced with Ride Control Packages. Time required for the change: less than a half-hour.

Result? Cars that ride better than ever before. *Cars that cut lading claims and cost less to maintain.* In short, here's how a leading railroad is providing smoother, safer freight hauls. And, *repeat orders* for Ride Control Packages prove that the Santa Fe's modernization program is paying off.

Find out how Ride Control Packages can help you keep your older cars in first class condition—and cut lading claims as well. Your ASF Representative has facts and figures on the practicability of making *smoother riding* another objective of any general repairs program. Write us today!

Bring your older cars up to modern riding standards



with

ASF

RIDE-CONTROL PACKAGES

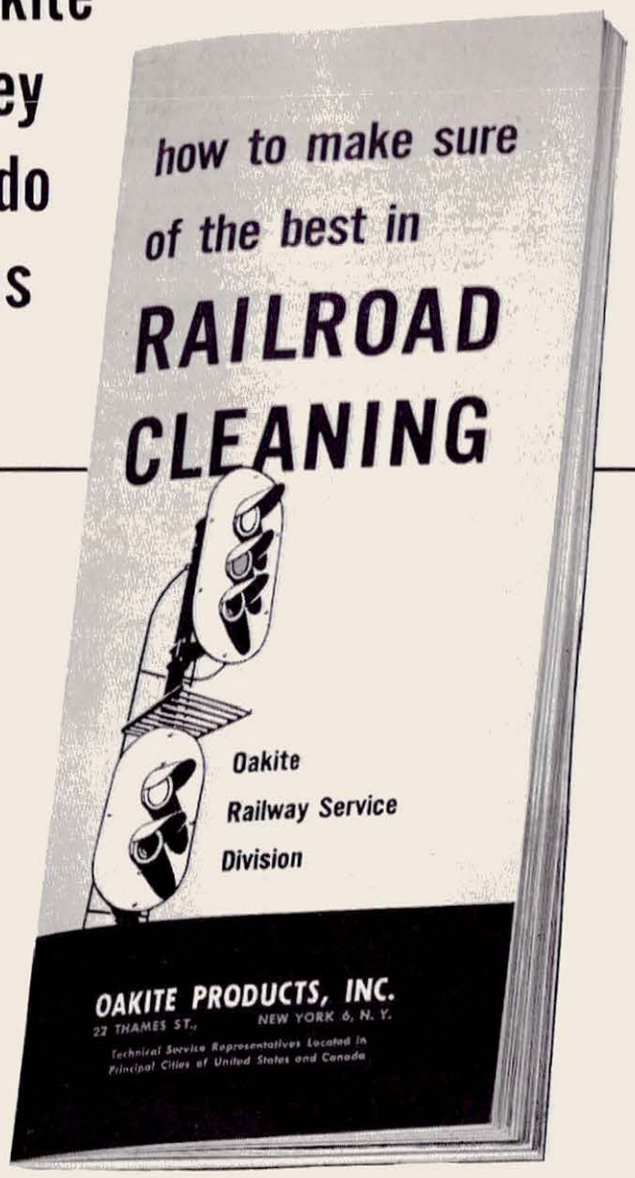
AMERICAN STEEL FOUNDRIES

410 N. Michigan Avenue, Chicago 11, Illinois

Look for this MINT ◯ MARK on the running gear you specify

Canadian Sales: International Equipment Co., Ltd., Montreal 1, Quebec

Just ONE IDEA taken from this FREE 56-page Oakite booklet can save money for your road . . . help do many maintenance jobs easier, faster, safer



Between the covers of this 56-page booklet you will find described and illustrated many job-tested cleaning short-cuts. It's the kind of practical, down-to-earth information that can lead to better maintenance and overhaul of steam and Diesel power.

You can learn how to speed up and simplify jobs such as these:

- **Cleaning Journal Boxes**
- **Cleaning and Rust-Proofing Roller Bearings by New, Mechanized Mass Production Method**
- **Semi-Automatic Cleaning of Running Gear**
- **Filter Cleaning**
- **Coach Washing . . . Manual and Mechanical**

You can be Sure of the BEST in Railroad Cleaning . . .

. . . by sending for this FREE Booklet. And by making full use of Oakite Technical Advisory Service in terminal or shop. Constructive literature and conscientious service is available to you immediately without cost or obligation. Consult Oakite today!

Send for Your Copy Today

OAKITE PRODUCTS, INC., 46 Rector Street, NEW YORK 6, N. Y.
In Canada: Oakite Products of Canada, Ltd. 65 Front St. East, Toronto, Ont.

OAKITE

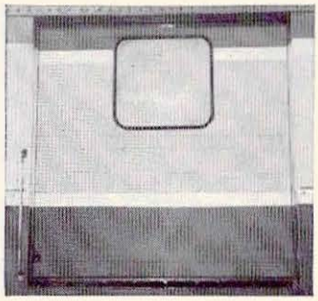
RAILWAY DIVISION

MET-L-WOOD DOORS

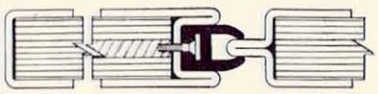
METAL BONDED TO PLYWOOD

★ LIGHT... TOUGH... DURABLE
★ NO THROUGH-BOLTS
NO WARPING
★ NO TWISTING
NO SWELLING

BAGGAGE AND POSTAL CAR DOORS



Completely weatherproof Met-L-Wood doors effectively prevent internal rust and rot... and their tough, smooth surfaces stay new-looking for years. Stainless steel channels along bottom edges of sliding doors are rustproof... virtually wearproof. All-rubber window sash installed or removed in minutes... rattle-proof... water- and weatherproof. Available in full width and split types ... sizes to meet all needs.

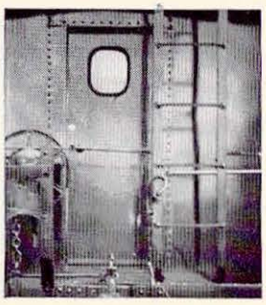


Exclusive Split Door Seal

Drawing above shows simple Met-L-Wood Split Door Seal which assures weather- and watertightness for years of continual use. Seal also provides effective cushion when closing split doors.

PASSENGER CAR END, VESTIBULE, INTERIOR DOORS

Sound-deadening, insulating, vibration-damping Met-L-Wood doors for passenger cars add to service life, cut deadweight ... Combine modern, clean-line beauty with great strength and durability. Furnished for manual or automatic operation, with or without hardware assembly. Tapping plates for hardware are built into doors ... invisible additions to strength and trouble-free service life. Sizes and types to fit all requirements ... exact dimensions insure quick assembly and perfect fit. Door thicknesses from ½″ up, as required.



CABOOSE DOORS

Met-L-Wood caboose doors are built to last the life of the caboose—and to give trouble-free service the whole time. Weather-proof, warp-proof, rot-proof doors can be provided with or without stationary windows in all-rubber sash or with standard drop sash. Available with or without hardware. In all sizes to exactly meet specifications.

DIESEL LOCOMOTIVE DOORS

Widely used by builders on new locomotives, Met-L-Wood doors guarantee trouble-free operation of end and interior doors on diesel road locomotives and cab doors for diesel switchers. Furnished to exact dimensions, with or without windows; either with hardware installed, or with tapping plates placed for hardware assembly on the job.

Write for this Bulletin

Met-L-Wood Bulletin 520 gives the complete, illustrated story on Met-L-Wood doors for railroad uses ... shows construction details, describes standard and special types and sizes. Your copy sent free upon request—write for it today.

MET-L-WOOD
CORPORATION

6755 W. 65th Street
Chicago 38, Illinois

MET-L-WOOD • *STRONG... LIGHT... Smooth Finish... Sound Deadening... Fire-Resisting... Insulating*

everyone gets into the act—

by telephone

The safe progress of a train and its cargo depends upon many widely separated people working closely together through dependable communications — teamwork which many railroads insure with a P-A-X Business Telephone System, a product of Automatic Electric Company.

For example: forty-two railroads now own and operate P-A-X Systems that provide quick automatic telephone service, exclusively for railroad business, and using their own circuits. They expand circuits inexpensively with telephone and telegraph *carrier* —and more than three-fourths of all railroad carrier equipment in the U.S.A. is supplied by Automatic Electric. In fact, this nation-wide organization has long been a leading supplier of communications equipment for the railroad industry, including P-A-X Business Telephone Systems, Lenkurt Carrier Telephone and Telegraph Systems, Intra-Train Telephone Systems, Railroad Telephones, and a complete line of communications supplies.

Automatic Electric, originator of the automatic dial telephone system, has served America's railroads for more than forty years. It is therefore not surprising that railroad communication men today turn to Automatic Electric and its specialists for the kind of planning, equipment and service that make modern communication pay dividends.

For prompt service or information, contact your Automatic Electric representative, or call us at HAymarket 1-4300, Chicago, Ill.

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Sure, there is a Santa Claus! By Hungerford

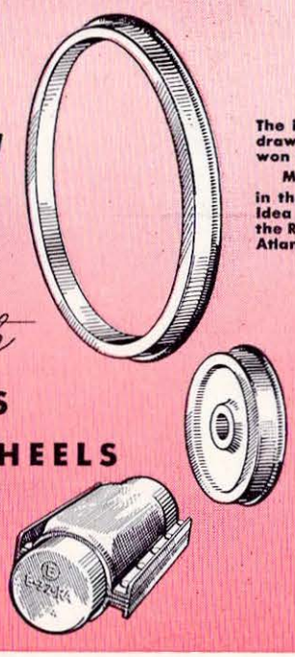
Edgewater Steel Company

PITTSBURGH, PA.

The idea for this cartoon, drawn by Mr. Hungerford, won a prize for Mr. M. J. ALGER, JR. in the Edgewater Cartoon Idea Contest, held during the R.S.M.A. Convention at Atlantic City in June 1953.

Serving America's Railroads with

ROLLED STEEL TIRES
ROLLED STEEL WHEELS
and **DRAFT GEARS**



We will be glad to send you enlarged copies of this Hungerford cartoon (without advertising copy) for posting on your office and shop bulletin boards, or a cut for your company magazine, at cost.

SANTA FE gears for mass production of reflectorized speed control signs

SPEED CONTROL SIGNS—both new and existing—are reflectorized in record time in this new AT&SF sign shop. In its very first year of operation, this shop has reflectorized all of the road's permanent speed control signs—80% of its temporary signs, plus many yard limit, railroad crossing, railroad junction and other signs.

Unique in the Sante Fe's reflectorization program is the fact that it makes full use of existing painted wood signs by bonding the "Scotchlite" Reflective Sheeting to a metal blank and fastening it directly to the face of the old sign. "Scotchlite" Sheeting is bonded directly to the faces of all-metal temporary speed control signs. Pre-cut letters or numbers are bonded to the sheeting with the same operation.

If you'd like to learn more about this reflectorization program, return the coupon below. No obligation of course.

ONLY TWO MEN—a painter and a helper—are needed. Tailored exclusively for the making of reflectorized signs, this Albuquerque shop virtually revolutionized the road's sign-making by replacing the three shops that made conventional painted signs.

THIS HIGH SPEED VACUUM APPLICATOR requires no special skills or long training to operate. Heat permanently bonds the sheeting to sign surface. Entire bonding operation is done by one man— takes approximately six minutes.

Minnesota Mining & Mfg. Co.
Dept. A123St. Paul 6, Minn.

Send me additional information on Sante Fe sign shop operation.

Name_____

Company_____

Address_____

City_____ Zone____ State_____

REG. U.S. PAT. OFF.
SCOTCHLITE
REFLECTIVE SHEETING

Made in U.S.A. by MINNESOTA MINING & MFG. CO., St. Paul 6, Minn.—also makers of "Scotch" Brand Pressure-Sensitive Tapes, "Scotch" Sound Recording Tape, "Underseal" Rubberized Coating, "Safety-Walk" Non-slip Surfacing, "3M" Abrasives, "3M" Adhesives. General Export: 122 E. 42nd St., New York 17, N. Y. In Canada: London, Ont., Can.

3M COMPANY

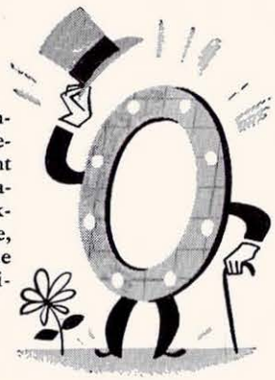
How to make packings last longer

Tips by Johns-Manville Engineers to help you keep equipment running

The right type of gasket -properly installed -saves many a costly sealing headache...

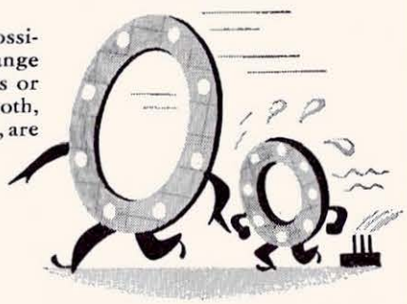
Be sure I'm in style.

It's hardly worth while to use inferior quality gasketing for a replacement job, when the right style of a good quality gasket material can be obtained. For a packing that will give good service, be sure the style selected is one recommended for your conditions.



I work better when I'm thin.

Use as thin a gasket as possible for the particular flange condition. When flanges or surfaces are flat and smooth, thinner gaskets, as a rule, are better than thicker gaskets. Where surfaces are rough and do not line up perfectly, thicker gaskets usually do a better job.



Don't use oil on me!

Often gasket materials have rubber in their composition, and oil causes deterioration of rubber. If it is desirable to graphite one or both surfaces of the gasket for easy removal, use a solution of graphite and water, with or without a small amount of glycerine. If the joint is to be permanent, it is better not to treat the gasket at all.

I give better service if these rules are followed, too.

Where possible, have ring-cut gaskets used. They are preferable to full-face gaskets. See that the gasket is properly centered and does not project inside the flanges. Make sure flanges are perfectly clean, true, and parallel. Have bolts followed up the next day after installing new gaskets.

You can count on these famous Johns-Manville Quality Packings for long lasting service, superior performance—

J-M Service Sheet. Style No. 60—For general service against saturated and superheated steam, air, gas, water, hot oil, etc.

J-M Seigelite Sheet. Style No. 711—For use against water and hazardous liquids such as gasoline, benzene, oils.

J-M Mobilene Sheet Packing. Style No. 101—Resists high temperatures and pressures on cylinder heads, manifold flanges, etc. of gasoline equipment.

J-M Kearsarge Handhole and Manhole Gaskets. Style No. 116—Durable, pliable and resilient. Made of folded and cemented plies of asbestos-metallic cloth.

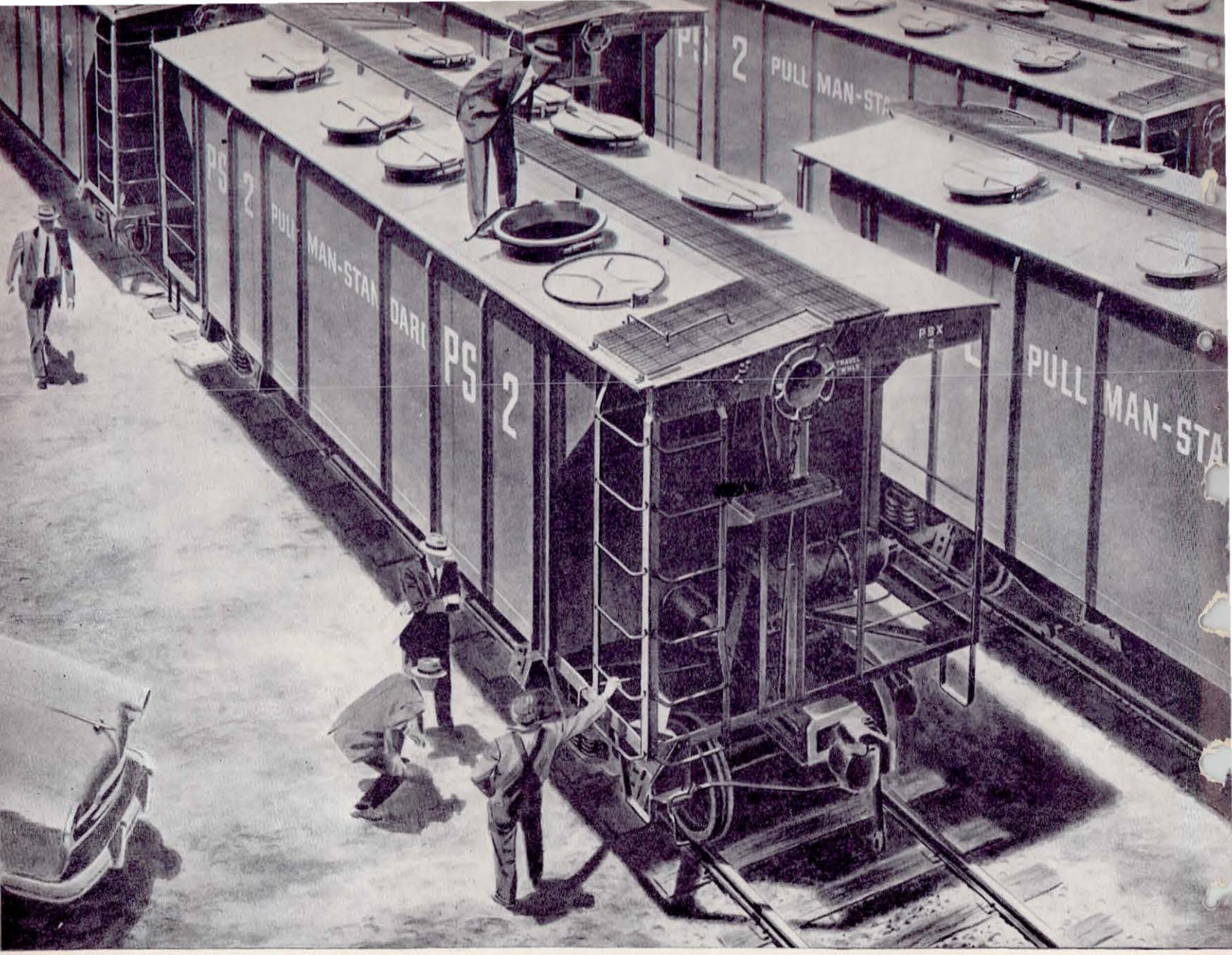
J-M Spirotallic Boiler Gaskets. Style No. 914—Spirally wound metal-asbestos gaskets of unusual strength and resilience.

J-M Liberty Red Rubber. Style No. 107—For water, air and steam at low temperatures and pressures.

Your Johns-Manville Representative will help, too! He will be glad to talk over your packing problems with you to help you get the most out of your packings . . . or to help you select the most efficient and long wearing packing for your job. Johns-Manville, Box 60, New York 16, N. Y. In Canada, 199 Bay St., Toronto 1, Ontario.

JOHNS-MANVILLE JM PRODUCTS

Johns-Manville PACKINGS & GASKETS



THE PS-2 COVERED HOPPER CAR

The PS-2 Covered Hopper Car represents another Pullman-Standard achievement in freight-car standardization for dependability and economy. The design is new, and production includes extensive use of automatic arc welding.

In addition to the sturdier construction, characteristic of standardized freight cars, some of the PS-2's features include: improved circular hatches; smooth self-cleaning hoppers; and a sturdier, safer roof.

NEW BOOKLETS

Anyone concerned with Covered Hopper Cars, Box Cars or Hopper Cars will be interested in the facts, specifications and details contained in these illustrated booklets. Write for a copy of any one or all three.

LOOK at these standardized cars

Like the PS-1 Box Car and the PS-3 Hopper Car, the PS-2 Covered Hopper Car is the result of tested design and continuous production.

This means that railroads are benefiting from top-quality freight cars produced more economically.

These standardized cars include the advantages of continuous production and the economies of specialized tools and techniques.

Their stamina and continual improvement are influenced by "on-line" checking by Pullman-Standard Sales and Service engineers and laboratory testing by Research and Development engineers.

Features of the new PS-2s are many: new all-around strength; special welded design that means quick, clean unloading with no material retaining ledges, projections or structural pockets; and new center pressure locking hatch covers, on the circular hatches, add weather protection.

PS-2 design allows this car to be adapted to a three or four-hopper car for the transportation of various bulk commodities.

1,405 PS-2 Covered Hopper Cars have been bought by ten railroads—an indication that standardized cars are a sound, revenue-building investment.

YOUR NEEDS CREATE THE PULLMAN "STANDARD"

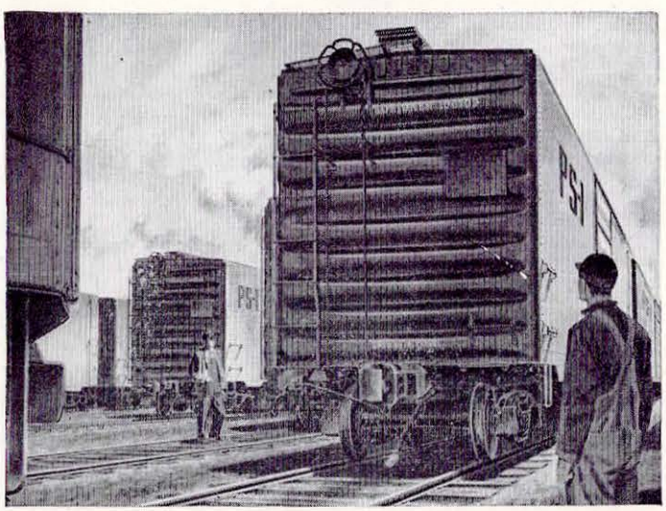
PULLMAN-STANDARD

CAR MANUFACTURING COMPANY

SUBSIDIARY OF PULLMAN INCORPORATED

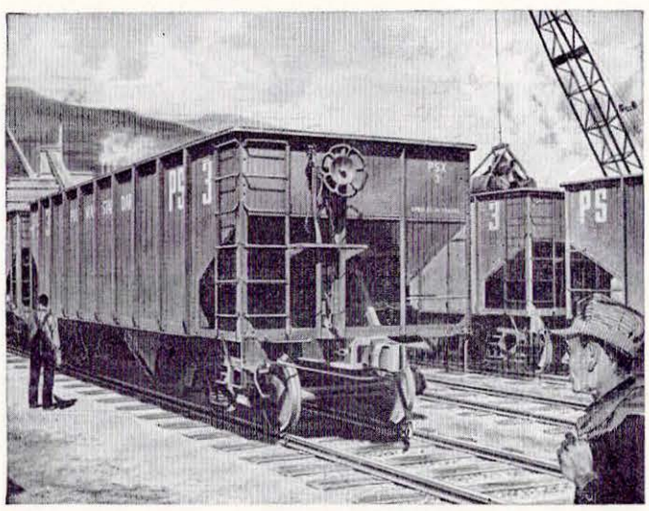
79 EAST ADAMS STREET, CHICAGO 3, ILLINOIS

BIRMINGHAM, PITTSBURGH, NEW YORK, SAN FRANCISCO, WASHINGTON



THE PS-1 BOX CAR

The PS-1 is a good example of the progressing standard which is so important in the successful operation of these cars. Pullman-Standard Research and Development engineers have never stopped testing, proving and improving the standardized PS-1. They continue to anticipate the railroads' needs for better, more economical freight cars. Under laboratory control, Research and Development technicians reproduce service hazards. The cars are subject to conditions more severe than those actually ever encountered.



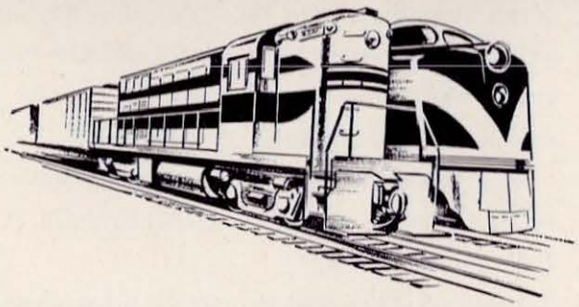
THE PS-3 HOPPER CAR

The specifications of the PS-3 resulted from a thorough inspection of virtually every type of hopper car in service, and from a study of the effect, on the cars, of current handling practices. They incorporate proven advantages, omit potential trouble spots.

Among the objectives set for these cars were three which dictated welded construction: maximum strength at all vital points, maximum corrosion resistance, and smooth interiors for fast loading.

Outstanding benefits of the

Exide-Ironclad



for diesel starting

When you specify an Exide-Ironclad Battery, you are assured of:

Quick breakaway and fast acceleration of engine to firing speed . . . high power reserve at all times for operation of control equipment . . . high availability—uninterrupted on-line service . . . low costs of operation, maintenance, depreciation . . . inherent safety . . . clean, quiet, vibrationless operation.

Rugged Exide-Ironclad Batteries are available in interchangeable sizes for diesel-electric locomotives of every make.

Type MV-17-D Exide-Ironclad Battery —284 ampere hours—for cranking switching locomotives of 600 hp and larger.

Type MV-25-D Exide-Ironclad Battery —426 ampere hours—for cranking road locomotives of the larger sizes.

WHEN IT'S AN EXIDE-IRONCLAD YOUR DIESELS START

YOUR BEST BATTERY BUY AT ANY PRICE

Here's the Inside Story of the EXIDE-IRONCLAD Battery

Inside . . . where it counts most . . . EXIDE-IRONCLAD is entirely different from any other battery. It's made that way by the exclusive IRONCLAD slotted tube construction . . . a principle that provides direct operating-hour savings for you.

POSITIVE PLATE SPINES cast with the heavy top bars, are of SILVIUM, which resists corrosion—contributing to longer battery life.

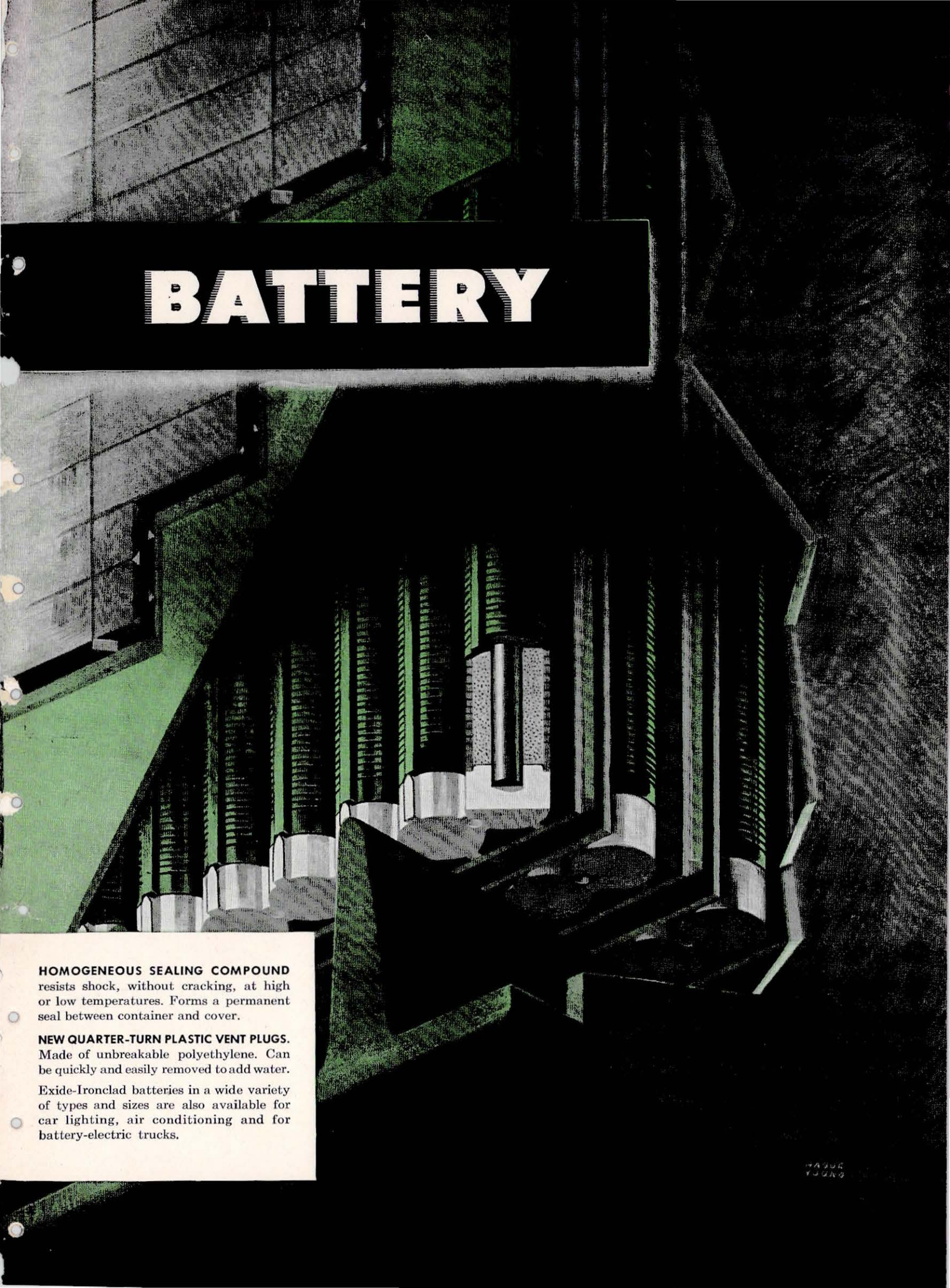
SLOTTED TUBES retain active material in contact with spines, yet permit the electrolyte to penetrate through the active material.

POLYETHYLENE TUBE SEALER. This acid-proof plastic sealer fits snugly into the bottom of positive plate tubes, sealing in the active material for a longer working life.

1888 . . . DEPENDABLE BATTERIES FOR 65 YEARS . . . 1953

THE ELECTRIC STORAGE BATTERY CO., Phila. 2 • *Exide Batteries of Canada, Limited, Toronto*

"EXIDE-IRONCLAD" and "SILVIUM" *Reg. T.M. U.S. Pat. Off.*



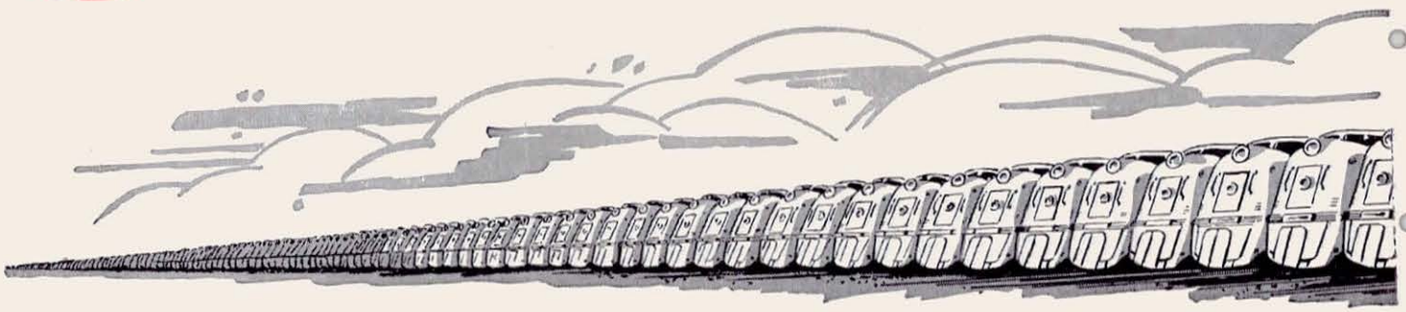
HOMOGENEOUS SEALING COMPOUND resists shock, without cracking, at high or low temperatures. Forms a permanent seal between container and cover.

NEW QUARTER-TURN PLASTIC VENT PLUGS. Made of unbreakable polyethylene. Can be quickly and easily removed to add water.

Exide-Ironclad batteries in a wide variety of types and sizes are also available for car lighting, air conditioning and for battery-electric trucks.

Now it's...

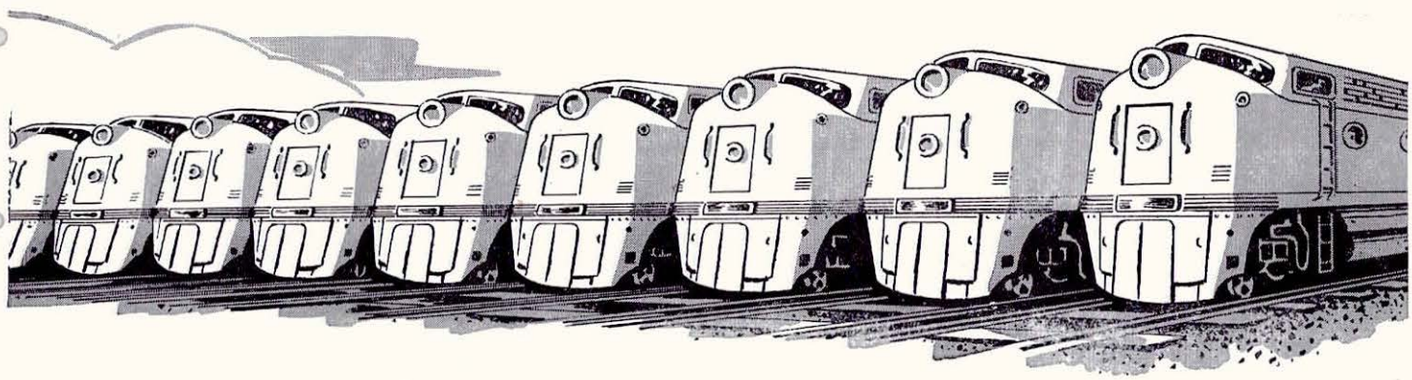
Over One



...More than 100 U.S.

GASCON DIESEL Oil!

Hundred!



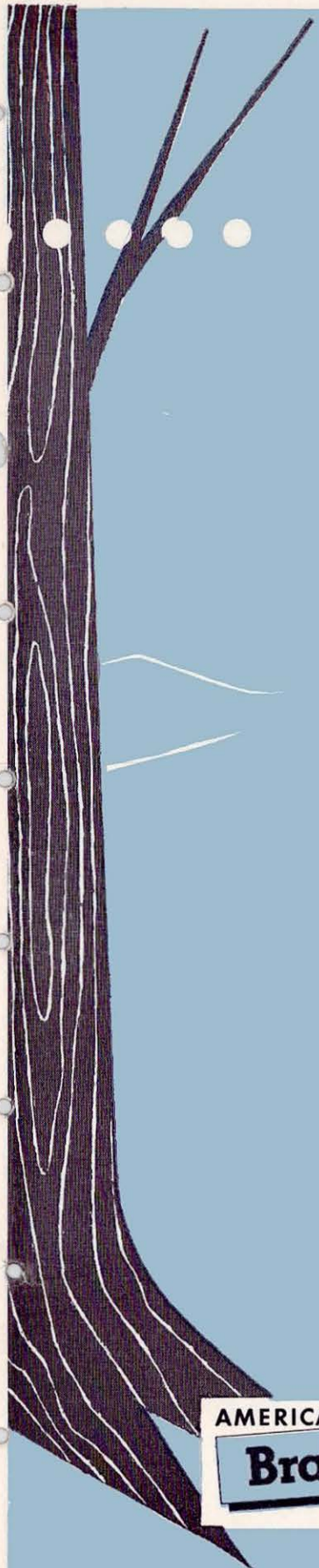
Railroads specify Sinclair

That was yesterday's record . . . and the list grows longer week by week.
Why this trend toward GASCON®? Simply that Sinclair GASCON DIESEL Oil has proved its superiority *where quality lubrication is essential.* The fact that more than 100 leading U. S. Railroads give first preference to this one Diesel lubricant is *convincing proof of* GASCON *quality.*
It's a fact that gives cause for thought . . . why don't *you* use Sinclair GASCON in your Diesels?

SINCLAIR RAILROAD LUBRICANTS

SINCLAIR REFINING COMPANY, RAILWAY SALES • NEW YORK, CHICAGO, ST. LOUIS, HOUSTON

stop...



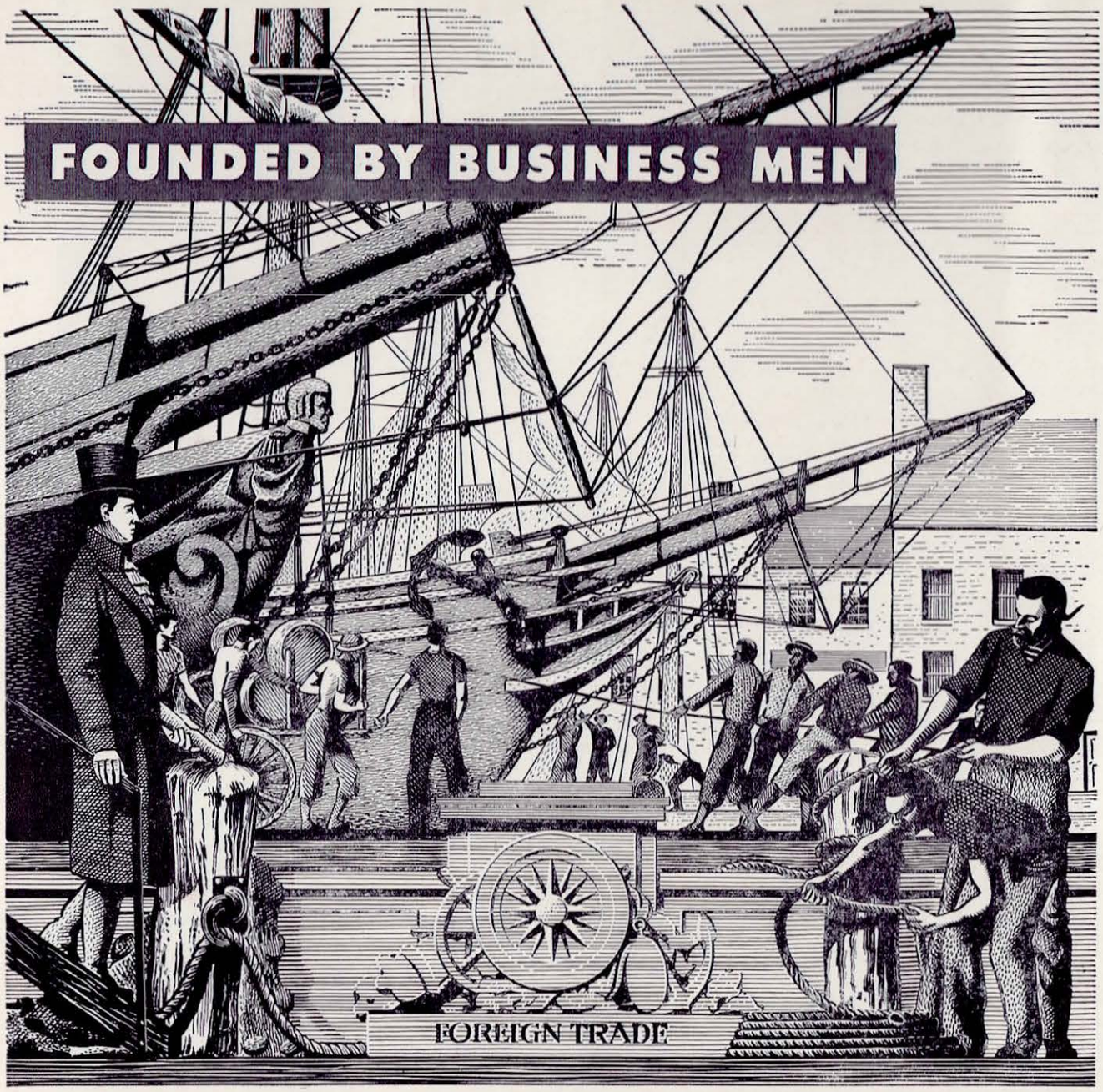
This man needs a safe stop in a hurry. Railroad men know, however, that with Diamond "S" brake shoes on the wheel tread they have the ability to stop safely whenever it is required in today's high speed operations.

Diamond "S" shoes have won the overwhelming preference of the railroads by consistently giving safe, dependable and economical service under every operating condition. Brake Shoe progressive research and manufacture will continue to provide the best in railroad brake shoes.

AMERICAN
Brake Shoe
COMPANY

BRAKE SHOE AND CASTINGS DIVISION

1999



ADAPTED FROM ONE OF A SERIES OF MURALS IN THE BANK'S MAIN OFFICE AT 48 WALL STREET

FOR BUSINESS MEN

In 169 active years a business man's bank learns how business men like to do business. This is an intangible asset that leaders of commerce and industry recognize and appreciate. Perhaps that's one reason why The Bank of New York — founded in 1784 by a group of merchants—has today commercial accounts in each of the 48 states, and finances foreign trade in all parts of the world.

Our Commercial, Trust, and Investment Counsel Departments are always available to you, wherever you are, or whatever your needs may be. You are invited to investigate our modern facilities, and the completeness of understanding that comes from generations of experience.

THE BANK OF NEW YORK

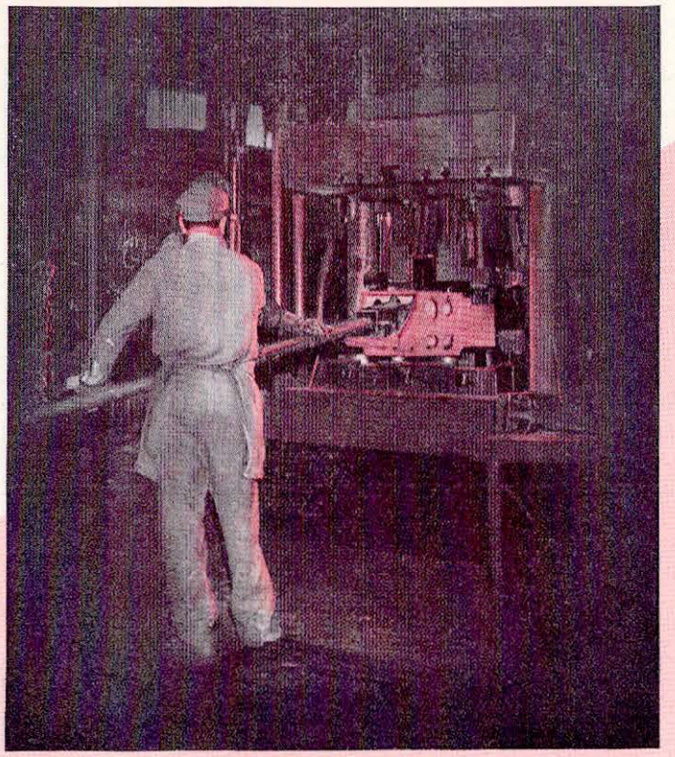
New York's First Bank • Founded 1784

Main Office: 48 WALL ST. ☆ *Uptown Offices:* 530 FIFTH AVE. ☆ MADISON AVE. AT 63rd ☆ MADISON AVE. AT 73rd

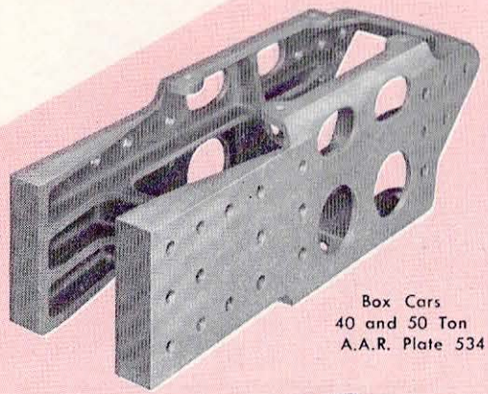
Member Federal Deposit Insurance Corporation

Hot Die Pressed

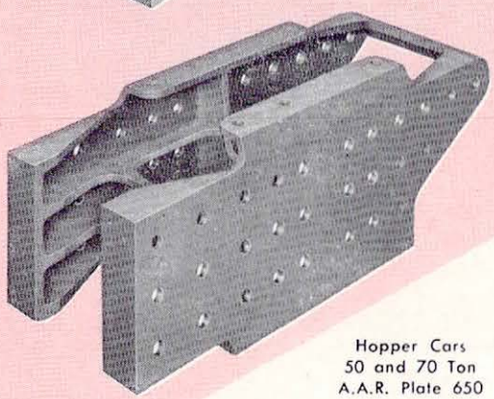
BOLSTER CENTER FILLERS



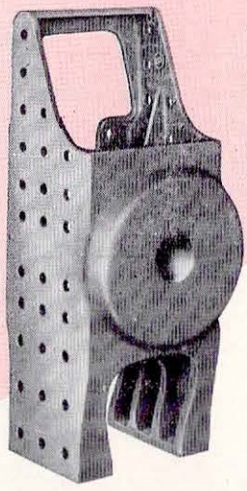
Buckeye Method of Hot Die Pressing
Bolster Center Fillers



Box Cars
40 and 50 Ton
A.A.R. Plate 534



Hopper Cars
50 and 70 Ton
A.A.R. Plate 650



Body Center
Plate Cast
Integral

The use of Hot Die Pressed Bolster Center Fillers offers the following economies and advantages:

- Close tolerances maintained (A.A.R. Plate 537)
- Metal required for machining eliminated
- Uniform metal thicknesses with minimum weight
- Top, bottom, sides, and draft lugs die squared
- Homogeneous one-piece casting for use where maximum strength is required
- All rivet holes drilled

B

THE BUCKEYE STEEL CASTINGS COMPANY

New York, N. Y. Columbus, Ohio Chicago, Ill.

WHAT'S YOUR ALLOY STEEL PROBLEM?

SELECTION?
STRENGTH?
HARDNESS?
TOUGHNESS?
MACHINABILITY?
HEAT TREATMENT?
TOOL LIFE?
SURFACE FINISH?
LOW PRODUCTION?
HIGH UNIT COSTS?

Check your problem . . . or problems. Then call in Republic's 3-Dimension Metallurgical Service.

The man you meet will be the Republic Field Metallurgist. He comes to your plant, studies your product, examines your production methods. His report goes back to the Republic Mill and Laboratory Metallurgists.

These three specialists then work together to diagnose the trouble. From their wide knowledge of alloy steels, how they respond to forging, to heat treatment, to any work or process, they make recommendations. Not general ones, but those suitable for your plant and your particular problems, based on efficiency. And they stay within, or below, your cost limits. The results? Higher quality, greater output, economy.

Scores of Republic customers already have attained these benefits by taking advantage of this service. Ask your Republic salesman to call in his 3-Dimension Metallurgical Service. It's yours for the asking.

3-DIMENSION Metallurgical Service

...combines the extensive experience and coordinated abilities of Republic's *Field, Mill* and *Laboratory* Metallurgists with the knowledge and skills of your own engineers. It has helped guide users of Alloy Steels in countless industries to the correct steel and its most efficient usage. IT CAN DO THE SAME FOR YOU.

REPUBLIC STEEL CORPORATION
Alloy Steel Division • Massillon, Ohio
GENERAL OFFICES • CLEVELAND 1, OHIO
Export Department: Chrysler Building, New York 17, N.Y.

Republic REPUBLIC STEEL
ALLOY STEELS

Other Republic Products include Carbon and Stainless Steels—Sheets, Strip, Plates, Pipe, Bars, Wire, Pig Iron, Bolts and Nuts, Tubing

GRINNELL announces its new line of

GAS-FIRED UNIT HEATERS

Available in 7 sizes — with input ratings from 25,000 to 200,000 Btu's.

All parts readily accessible for periodic servicing.

AUTOMATIC! EFFICIENT! ASSURE YEARS OF DEPENDABLE SERVICE

Grinnell gas-fired unit heaters are easy to install, simple to operate and maintain. Efficient performance assured — with any type of gas — by modern design of burners and heat exchanger, proper motor and fan unit.

Automatic safety pilot operates to shut off main gas supply if pilot burner goes out. Flashback and extinction noise prevented by the burners' raised port design and proper port size for the gas used. Low speed motors have built-in thermal overload protection and automatic reset.

Additional features of Grinnell *gas-fired* unit heaters . . .

- Casing die-formed of heavy steel, with baked-on enamel finish
- Heat exchanger tubes and draft diverter of aluminized steel
- Combustion chamber of heavy steel, welded
- Burners of close-grained iron castings
- Adjustable louvers
- Burners and control assembly removable as a unit
- Hinged bottom pan permits cleaning interior of tubes
- Threaded pipe hangers for easy suspension
- Only wiring required is connection to room thermostat or manual switch
- Approved by the American Gas Association

WRITE FOR CATALOG

GRINNELL
UNIT HEATERS FOR STEAM, HOT WATER, GAS

Grinnell Company, Inc., Providence, Rhode Island • Coast-to-Coast Network of Branch Warehouses and Distributors

Manufacturer of: pipe fittings • welding fittings • forged steel flanges • steel nipples • engineered pipe hangers and supports
Thermolier unit heaters • Grinnell-Saunders diaphragm valves • prefabricated piping • Grinnell automatic fire protection systems

the more it's

AVAILABLE

the more it

EARNS

The earning power of a Diesel locomotive is measured by the hours and the days that it is available for use. Harrison oil coolers and jacket water coolers help to increase the availability . . . the earning power . . . of Diesels by maintaining oil and water temperatures within efficient limits. Always look to Harrison for heat transfer products of greater dependability.

HARRISON RADIATOR DIVISION

GENERAL MOTORS CORPORATION, LOCKPORT, NEW YORK

HARRISON

THE ENGINEER'S REPORT

DATA

LUBRICANT RPM Delo Oil R.R.

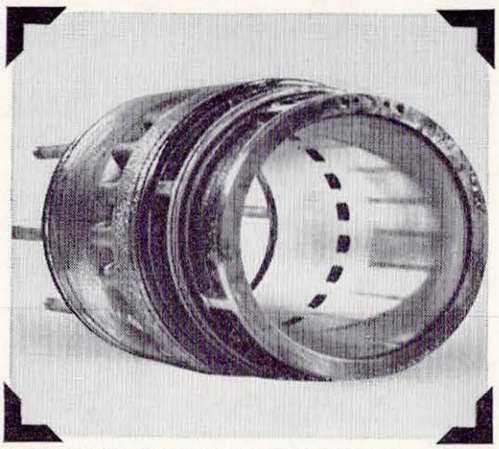
UNIT Diesel locomotive

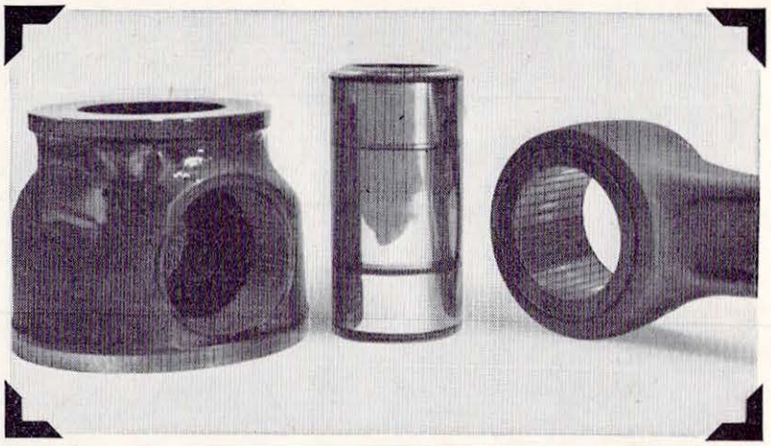
SERVICE Mountain freight haul

CONDITIONS Long, continuous grades to 1.6%

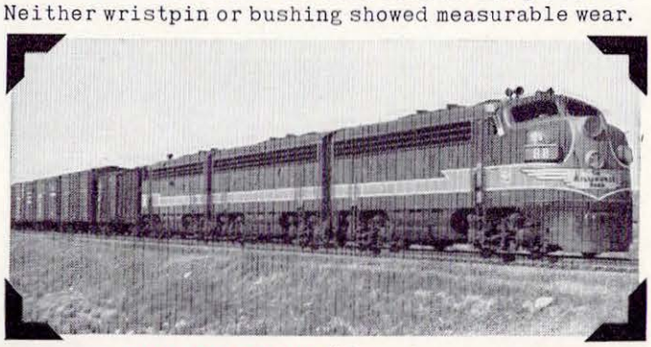
FIRM The Milwaukee Road

333,590 freight miles—only 0.0035 inch liner wear!

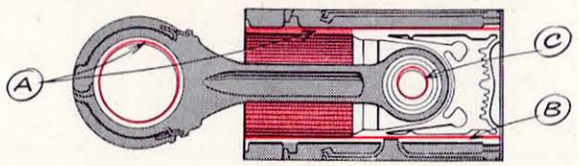




LUBRICATED WITH RPM DELO OIL R.R., this representative cylinder assembly was in good condition when pulled for regular inspection after 333,590 actual freight miles. Operation was on The Milwaukee Road's tough run between Othello, Washington, and Avery, Idaho. This liner, shown as it came from the engine, miked only 0.0035 inch wear, 0.001 inch taper, despite hard operating conditions—heavy loads, wide temperature variations, heavy grades, including one stretch of 20 miles of continuous 1.6 percent. Neither wristpin or bushing showed measurable wear.



How RPM DELO Oil R.R. prevents wear, corrosion, oxidation



A. Special additive provides metal-adhesion qualities...keeps oil on parts whether hot or cold, running or idle.

B. Anti-oxidant resists deterioration of oil and formation of lacquer...prevents ring-sticking. Detergent keeps parts clean...helps prevent scuffing of cylinder walls.

C. Special compounds stop corrosion of any bushing or bearing metals and foaming in crankcase.

FREE CATALOG: "How to Save Money on Equipment Operation," a booklet full of valuable information, will be sent you on request to Standard Oil Company of California, 225 Bush St., San Francisco, Calif.

RPM DELO LUBRICATING OILS

FOR MORE INFORMATION about this or other petroleum products of any kind, or the name of your nearest distributor handling them, write or call any of the companies listed below.

TRADEMARK "RPM DELO" REG. U.S. PAT. OFF.

STANDARD OIL COMPANY OF CALIFORNIA, San Francisco 20 • STANDARD OIL COMPANY OF TEXAS, El Paso
THE CALIFORNIA OIL COMPANY, Barber, New Jersey • THE CALIFORNIA COMPANY, Denver 1, Colorado

STOP RISING MAINTENANCE-OF-WAY COSTS WITH AMCRECO

Here is a simple, effective formula for cutting your rising maintenance-of-way costs—*Cut costs by reducing the amount of maintenance needed—Reduce the amount of maintenance needed by using products that stand up longer and give extra years of maintenance-free service.* Amcreco cross ties, bridge timbers, poles and plank—pressure treated with creosote—fit this formula for cutting maintenance costs.

Take advantage of our nearly half-a-century of experience in treating and processing wood for the railroad industry. Any of our nearby sales offices will be glad to discuss your needs with you.

Amcreco
Lowry Process
Creosoted Products

AMERICAN CREOSOTING COMPANY
INCORPORATED

COLONIAL CREOSOTING COMPANY INCORPORATED

AMCRECO LOWRY PROCESS CREOSOTED WOOD

GEORGIA CREOSOTING COMPANY INCORPORATED

GENERAL SALES OFFICE—CHICAGO, ILLINOIS
18 FIELD SALES OFFICES TO SERVE YOU

CROSS TIES • TIMBERS • POLES • PLANK

THE ENGINEER'S REPORT

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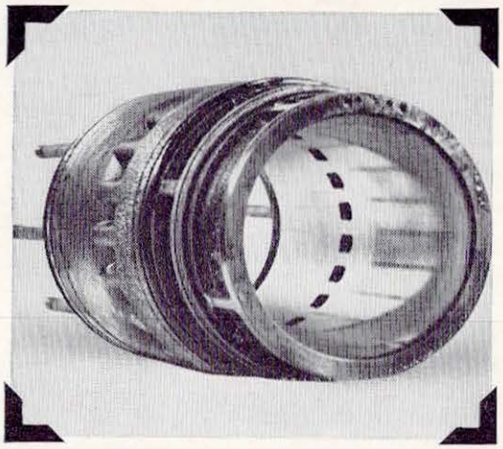

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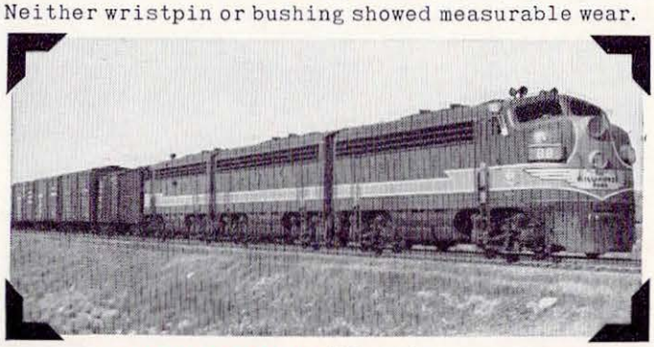

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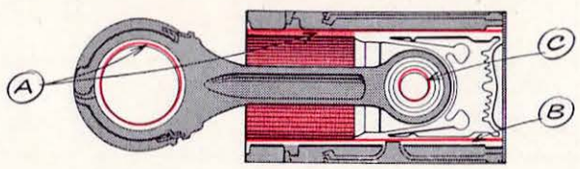

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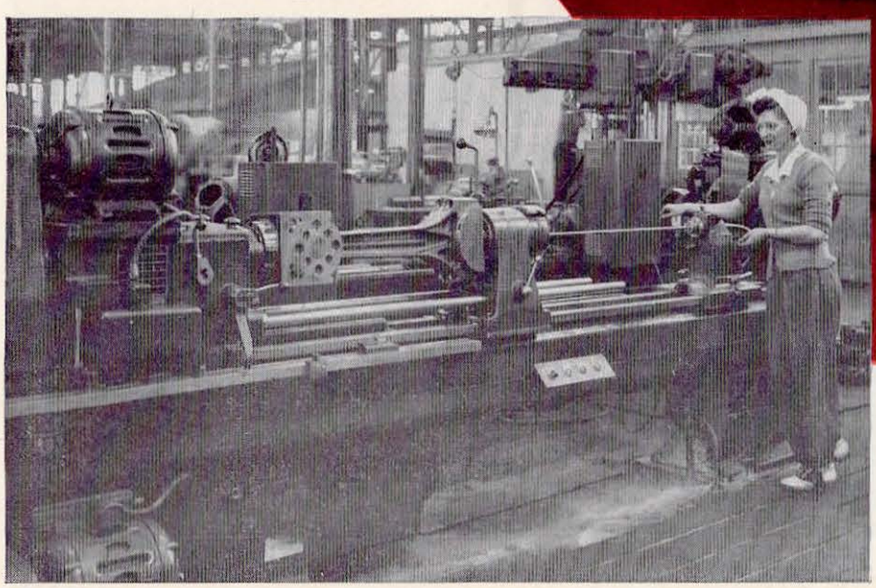
If they came in a Jewel Box — they couldn't be Finer!



One of the precise machining operations that guarantees the constant, gem-like quality of Baldwin Connecting Rods.

BALDWIN · BLH · LIMA-HAMILTON

BALDWIN

USE GENUINE BALDWIN DIESEL PARTS

BALDWIN DIESEL CONNECTING RODS are carefully designed and precision-built to insure maximum freedom from vibration and a truly smooth power flow. Perfectly balanced, precisely mated, they help maintain the peak performance of your Baldwin diesels . . . still another reason why you should standardize on top quality Baldwin parts.

Only genuine Baldwin diesel replacement parts can help you to keep idle engine time and extra labor costs at an absolute minimum. They're available at Baldwin's seven conveniently located warehouses to help you keep your Baldwin diesels in constant, trouble-free operation.

-LIMA-HAMILTON

DEPT. 7539, PHILADELPHIA 42, PA. • OFFICES IN PRINCIPAL CITIES

STOP RISING MAINTENANCE-OF-WAY COSTS WITH AMCRECO

Here is a simple, effective formula for cutting your rising maintenance-of-way costs—*Cut costs by reducing the amount of maintenance needed—Reduce the amount of maintenance needed by using products that stand up longer and give extra years of maintenance-free service.* Amcreco cross ties, bridge timbers, poles and plank—pressure treated with creosote—fit this formula for cutting maintenance costs.

Take advantage of our nearly half-a-century of experience in treating and processing wood for the railroad industry. Any of our nearby sales offices will be glad to discuss your needs with you.

Amcreco
Lowry Process
Creosoted Products

AMERICAN CREOSOTING COMPANY
INCORPORATED

COLONIAL CREOSOTING COMPANY INCORPORATED

AMCRECO LOWRY PROCESS CREOSOTED WOOD

GEORGIA CREOSOTING COMPANY INCORPORATED

GENERAL SALES OFFICE—CHICAGO, ILLINOIS
16 FIELD SALES OFFICES TO SERVE YOU

CROSS TIES • TIMBERS • POLES • PLANK

ONE THIRD OF A MILLION

more than 3,400,000 car sets of

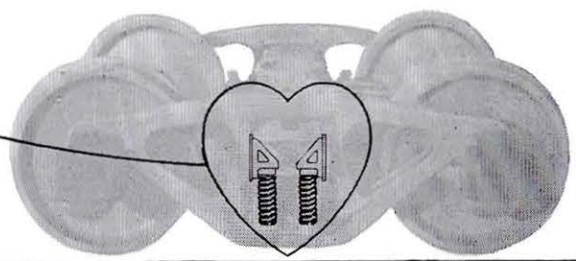
BARBER STABILIZED FREIGHT CAR TRUCKS

have been ordered to date!
This is because *Barber Stabilized Trucks* have proven their ability to ride best for most loads.

With *Barber Stabilized Trucks*, every kind of Lading gets a cushioned car ride, and the shock absorbing action of *Barber Stabilized Trucks* also protects both car and rail.

easy to Assemble
easy to Dismantle
easy to Service!
Mighty easy Riding.

Barber Side Springs carry part of the load, increasing bolster spring capacity and reducing net cost.



STANDARD CAR TRUCK COMPANY
332 SOUTH MICHIGAN AVE.
CHICAGO, ILLINOIS

496

Train of 85 loaded cars of coal, 6400 actual tons, being handled down 2 per cent grade between Hiawatha and Martin, Utah, by one Alco 1600-hp 6-motor road switcher equipped with auxiliary compressor.

"Alco 1600-hp 6-motor road switchers have cut our train operating costs 30%"

. . . says L. A. Kane, President and General Manager, Utah Railway

"We began dieselization," says the president of the coal-carrying Utah, "with the purchase of six Alco 1600-hp 6-motor road switchers. That was in January, 1952. Today, those six Alco units have cut our train operating costs by about 30 per cent and have considerably increased our operating efficiency."

Mr. Kane gives two examples: "On our heavy mine-run switching assignments

Alco

AMERICAN

the 6-motor road switchers are giving very satisfactory service on 4 per cent grades at altitudes of better than 7000 ft. And they are doing an equally good job on the difficult run between Martin and Provo, Utah, with two units in multiple on the head end and four units in multiple in helper service hauling a train of 85 cars of coal—6400 actual tons—up the 2.4 per cent ruling grade between Martin and Soldier Summit, Utah."

"The Utah," adds Mr. Kane, "is looking forward to still lower operating ratios and greater efficiency with delivery next summer of three additional Alco 6-motor road switchers."

You Get More Tons per Train with Alco 6-Motor Road Switchers

The Utah's experience is by no means unique. On *another* major Western road, for example, a single Alco 6-motor road switcher recently hauled 1343 trailing tons up a grade of 2½ per cent. *This was the heaviest load ever hauled up this grade by a single diesel locomotive.* Tractive effort was 85,000 pounds at 23.8 per cent rail adhesion.

In starting tests on yet another Western road, this same 1600-hp unit recorded 105,000 pounds tractive effort at 29.2 per cent adhesion while pulling 3402 trailing tons. Results like these explain why Alco 6-motor road switchers have tripled in sales every year since their introduction.

These rugged diesel-electrics are designed specifically for your heavy-drag assignments. With gross weight of 180 tons, they give up to 50 per cent greater tractive effort than 4-motor units of equal horsepower. Their ability to haul more tons per train cuts costs per MGTM by as much as 25 per cent.

An additional feature: Alco 6-motor road switchers are easy to operate in multiple. Thus they not only pack the pull for your big jobs but also provide economical motive power for your short-freight and switching assignments.

The 1600-hp 6-motor road switcher is only one of five road switchers engineered by Alco to give you *better motive power for greater earning power.* Your nearest Alco locomotive representative can give you the whole story.

Condensed Specifications for Alco 1600-HP 6-Motor Road Switchers

Weight
Fully loaded ..... 360,000 lb
On drivers ..... 360,000 lb
(Can be obtained in stepped weights from 280,000 to 360,000 lb)

Principal Dimensions
Length (inside knuckles) 56 ft 5¾ in.
Height ..... 14 ft 8¼ in.
Width (maximum) ..... 10 ft 1⅝ in.
Wheel base ..... 42 ft 3 in.
Each truck (rigid) ..... 12 ft 6 in.

Diesel Engine
ONE Model 244 turbosupercharged, 4-cycle, 12-cylinder, 1600-hp to generator for traction.

Dynamic Braking
Capacity 2900-hp

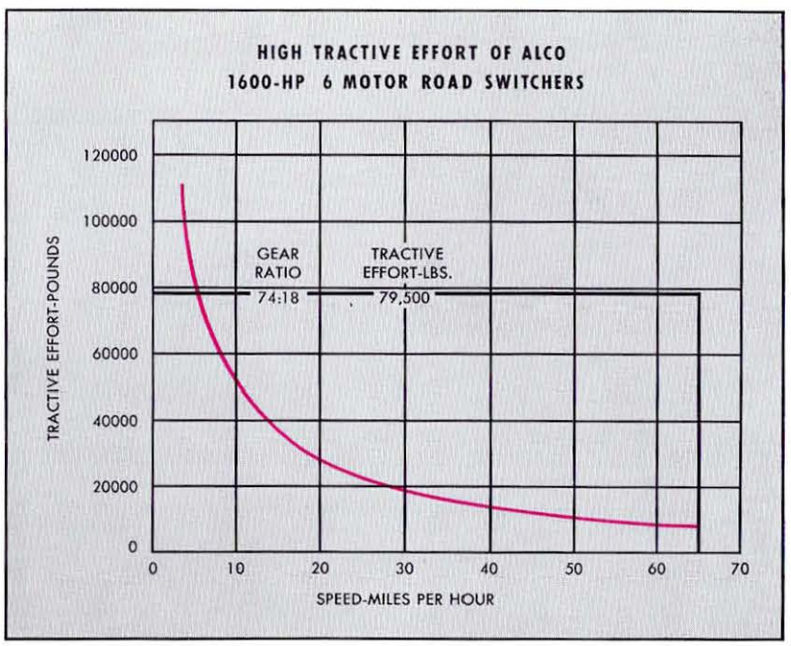
Running Gear
Trucks 3-axle, 6-wheel
Driving motors 6
Wheel diameter ..... 40 in.

Maximum Speed ..... 65 mph

Continuous Tractive Effort for 65 mph gearing ..... 79,500 lb

Traction Motor Gearing
Gear—number of teeth 74
Pinion—number of teeth 18
Ratio 4111

A *heavy-duty, all-purpose* unit available in a wide range of weights, the Alco 1600-hp 6-motor road switcher is capable of handling a wide variety of tough assignments.



LOCOMOTIVE COMPANY

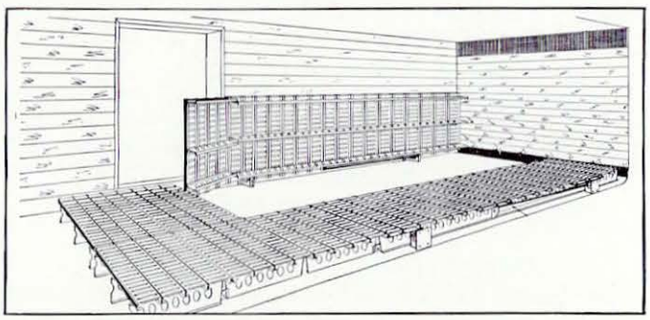
Sales and Service Offices in New York, Chicago, Cleveland, St. Louis, San Francisco, and Washington, D. C.

6 New Ways

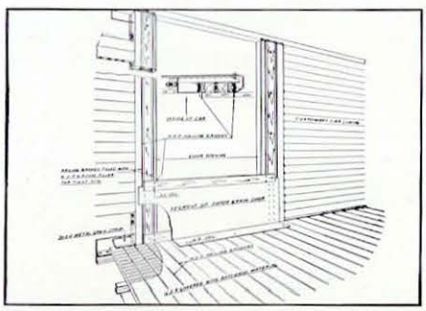
to use steel for improving freight service

Tomorrow's standard in floors—and already in use by over 50 railroads—Nailable Steel Flooring, the floor with the unique nailing groove. Moderately higher than other materials in original costs, N-S-F opens new avenues for reducing operating expenses—and more than pays for itself.

Permanent anchoring devices for flatcar loads—N-S-F with Multi-Position Holddown Fixtures—scientifically spaced channels with recessed rings or other types of anchoring devices. They provide maximum security with least time and trouble in loading. A new means to attract freight.

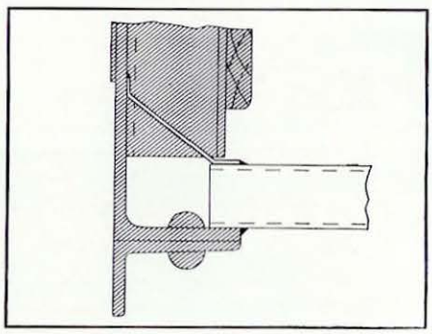


One-man racks for reefers—N-S-F Refrigerator Car Floor Racks—strong, light gauge steel, spring-hinged—withstand all loading operations, yet permit efficient cleaning—easily lifted by one man. Easily maintained too, because there's little to go wrong. Improves versatility of reefer use.



Boxcar doorpost section built on the unique N-S-F principle—takes repeated nailings without maintenance or replacement, strengthens door area—gives maximum protection to lading. An effective claim preventive.

N-S-F nail puller—makes quick job of clearing floors of nails too often left standing when blocking is removed. Saves time, protects packaged freight. Facilitates the "Clean Car" program.



Metal grain strip—welded or riveted to wall and to Nailable Steel Flooring. Assures tight car, clean and vermin-proof—guards against lading loss and damage. Another claim reducer.

N-S-F for NAILABLE STEEL FLOORING

PATENTS PENDING

GREAT LAKES STEEL CORPORATION

Steel Floor Division — Ecorse, Detroit 29, Michigan

NATIONAL STEEL CORPORATION

PRODUCER OF USS HIGH-TENSILE STEEL

Sales Representatives in Chicago, Philadelphia, St. Louis, Atlanta, Omaha, Denver, San Francisco, Montreal and New York.

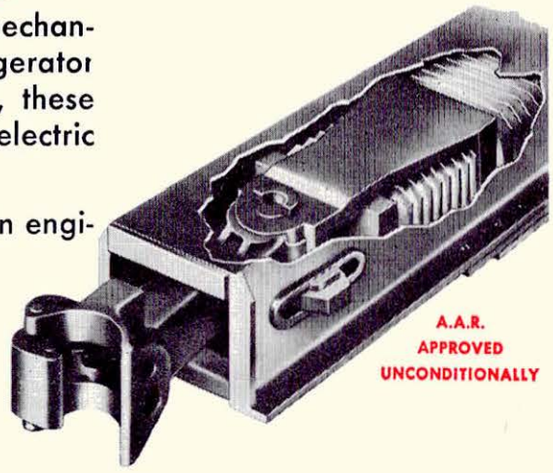
53-SF-11

5 years of research built this car

...naturally, 'G' control cushioning is provided by WAUGHMAT *Twin Cushions*

Pictured is one of thirty new, giant, super-insulated mechanical refrigerator cars built for the Burlington Refrigerator Express Company. Seventy-ton, fifty-feet in length, these cars feature controlled temperature through diesel-electric powered refrigerating and heating units.

Here is one of the finest refrigerator cars that modern engineering can produce, a super-car. Hence, it is no accident that service-tested Waughmat Twin Cushions were specified to provide super-cushioning. Twin Cushions are the only rubber draft gear unconditionally approved by the A. A. R.



WAUGH EQUIPMENT COMPANY, New York · Chicago · St. Louis · Canadian Waugh Equipment Company: Montreal

Freight Operating Statistics of Large Railways — Selected Items

Region	Road and Year	Miles of road operated	Locomotive Miles: Train miles	Locomotive Miles: Principal and helper	Locomotive Miles: Light	Car Miles: Loaded (thousands)	Car Miles: Per cent loaded	Ton-miles (thousands): Gross excl locos. & tenders	Ton-miles (thousands): Net rev. and non-rev.	Road-locos. on line: Serviceable Unstored	Road-locos. on line: Serviceable Stored	Road-locos. on line: B.O.	Road-locos. on line: Per cent B.O.
New Eng. Region	Boston & Maine 1953	1,668	246,820	251,367	8,882	9,227	68.8	580,011	239,286	71	2	8	9.9
	1952	1,690	246,472	253,206	11,526	9,362	70.7	584,328	251,099	79	11	11	10.9
	N. Y., N. H. & Htfd. 1953	1,749	301,354	301,366	20,195	11,904	68.8	736,537	313,341	93	..	3	3.1
	1952	1,765	286,849	286,927	18,048	11,472	71.2	701,817	310,192	100	..	2	2.0
Great Lakes Region	Delaware & Hudson 1953	793	203,050	208,861	10,555	9,930	73.5	670,413	362,964	45	..	4	8.2
	1952	793	215,962	226,000	8,708	10,455	74.5	717,967	390,488	69	58	11	8.0
	Del., Lack. & Western 1953	962	264,793	280,909	23,590	12,013	69.1	787,451	354,083	65	..	..	..
	1952	962	272,079	288,083	26,074	13,119	72.0	854,196	404,166	74	5	2	2.5
	Erie 1953	2,237	602,359	606,663	25,215	33,716	68.2	2,097,295	836,508	165	..	4	2.4
	1952	2,242	614,445	621,270	32,591	35,570	69.7	2,228,212	928,871	181	5	2	1.1
	Grand Trunk Western 1953	952	253,842	257,463	1,842	7,732	60.4	538,955	222,163	62	6	11	13.9
	1952	952	241,357	248,195	2,198	8,550	66.1	570,511	249,890	60	..	12	16.7
	Lehigh Valley 1953	1,151	226,322	230,342	7,286	10,931	67.7	772,243	361,202	33	..	1	2.9
	1952	1,206	229,319	234,073	10,975	11,530	73.6	770,349	384,654	35	..	..	..
	New York Central 1953	10,667	2,565,342	2,634,377	101,489	101,344	61.0	7,407,993	3,312,806	703	55	156	17.1
	1952	10,668	2,683,236	2,761,230	116,807	107,673	64.4	7,633,629	3,563,473	783	103	215	19.5
	New York, Chic. & St. L. 1953	2,161	751,331	779,544	7,709	28,712	65.9	1,999,903	914,887	212	16	32	12.3
	1952	2,160	762,601	792,093	9,483	31,219	69.7	2,186,077	1,036,317	194	4	46	18.9
	Pitts. & Lake Erie 1953	221	78,436	80,854	....	3,418	65.7	292,292	177,907	22	5	7	20.6
	1952	221	73,052	75,180	32	3,756	74.4	312,590	201,407	39	4	11	20.4
	Wabash 1953	2,381	567,492	570,728	6,927	24,513	66.3	1,592,312	623,460	100	20	24	16.7
	1952	2,381	511,094	515,708	8,506	22,486	70.7	1,414,473	602,611	110	30	38	21.3
Central Eastern Region	Baltimore & Ohio 1953	6,081	1,604,714	1,771,605	175,189	66,065	63.4	5,022,637	2,474,929	490	24	109	17.5
	1952	6,082	1,628,335	1,846,866	192,017	68,649	65.6	5,201,925	2,655,219	534	37	184	24.4
	Bessemer & Lake Erie 1953	213	58,447	64,191	380	3,370	63.9	388,305	255,115	18	14	..	..
	1952	212	72,748	78,784	602	4,011	61.3	469,045	306,571	24	16	13	24.5
	Central of New Jersey 1953	616	124,958	129,426	9,273	5,041	69.0	368,037	195,160	70	7	7	8.3
	1952	618	133,921	139,535	12,516	5,573	69.6	409,640	221,047	54	2	5	8.2
	Chicago & Eastern Ill. 1953	868	118,667	118,667	2,444	4,878	67.8	324,619	156,206	28	..	1	3.4
	1952	868	127,880	127,880	2,939	5,449	69.5	366,024	182,306	29	..	2	6.5
	Elgin, Joliet & Eastern 1953	236	94,375	95,004	28	2,928	63.7	233,959	125,737	41	..	..	..
	1952	236	94,175	95,688	966	3,704	66.8	295,469	164,960	39	..	3	7.1
	Pennsylvania System 1953	9,939	3,050,798	3,263,685	286,242	127,389	64.8	9,187,888	4,444,074	1,065	142	301	20.0
	1952	9,961	2,991,721	3,227,345	312,406	134,299	69.6	9,438,522	4,803,830	1,035	74	342	23.6
	Reading 1953	1,309	342,027	347,917	14,385	13,251	65.0	1,033,713	549,784	171	24	18	8.5
	1952	1,318	347,709	353,433	22,333	14,036	68.8	1,084,667	601,476	159	16	22	11.2
	Western Maryland 1953	873	169,537	187,204	14,188	6,406	63.1	528,469	296,353	88	27	2	1.7
	1952	878	186,734	219,008	27,167	6,635	67.3	532,421	307,943	127	5	10	7.0
Pocahontas Region	Chesapeake & Ohio 1953	5,034	1,284,191	1,312,916	35,701	57,442	57.8	4,924,752	2,729,369	418	48	138	22.8
	1952	5,036	1,342,191	1,391,149	46,440	65,460	58.1	5,703,761	3,223,193	433	63	179	26.5
	Norfolk & Western 1953	2,113	674,671	711,993	50,251	32,463	58.2	2,920,130	1,571,170	223	22	23	8.6
	1952	2,113	719,732	763,003	53,386	34,395	58.8	3,094,973	1,693,925	225	33	22	7.9
Southern Region	Atlantic Coast Line 1953	5,367	694,523	694,532	7,257	21,206	63.0	1,493,081	700,034	243	..	5	2.0
	1952	5,460	747,524	747,557	7,789	23,059	61.8	1,663,061	784,148	267	16	33	10.4
	Central of Georgia 1953	1,754	198,385	198,437	2,213	7,188	67.3	487,407	226,729	70	..	2	2.8
	1952	1,754	191,066	195,844	2,882	7,222	69.2	478,739	228,301	88	22	2	1.8
	Gulf, Mobile & Ohio 1953	2,718	304,666	304,666	83	15,692	70.7	1,042,985	503,676	84	..	5	5.6
	1952	2,718	314,942	314,942	294	16,775	73.5	1,098,285	538,957	85	..	4	4.5
	Illinois Central 1953	6,538	1,391,756	1,395,505	49,043	50,454	62.8	3,642,284	1,671,427	537	60	62	9.4
	1952	6,539	1,551,282	1,556,992	52,747	56,136	65.6	4,030,103	1,933,684	550	12	82	12.7
	Louisville & Nashville 1953	4,728	952,542	998,806	20,486	33,898	62.9	2,528,215	1,284,522	240	55	35	10.6
	1952	4,756	967,494	1,016,363	25,666	35,630	65.2	2,600,553	1,342,499	247	69	55	14.8
	Nash., Chatt. & St. Louis 1953	1,032	184,918	186,508	3,656	6,336	69.2	422,473	199,471	50	..	2	3.8
	1952	1,032	193,788	196,899	3,237	6,400	74.7	405,351	196,331	51	..	2	3.8
	Seaboard Air Line 1953	4,068	530,766	530,766	577	20,784	64.1	1,472,640	677,950	133	11	9	5.9
	1952	4,135	559,093	559,093	530	21,798	65.7	1,522,609	709,477	146	72	5	2.2
	Southern 1953	6,253	954,062	954,138	11,261	39,515	68.9	2,537,247	1,162,235	230	5	2	.8
	1952	6,264	1,041,161	1,041,249	11,695	41,038	71.8	2,581,027	1,207,731	277	69	67	16.2
Northwestern Region	Chicago & North Western 1953	7,849	773,350	776,081	11,756	33,586	65.1	2,374,642	1,057,959	218	33	60	19.3
	1952	7,872	919,142	929,398	18,397	37,511	67.5	2,632,488	1,162,841	305	5	87	21.9
	Chicago Great Western 1953	1,435	135,922	136,217	205	8,218	70.3	550,034	257,525	32	..	1	3.0
	1952	1,441	147,902	148,020	1,228	8,824	68.7	593,305	272,319	34	..	1	2.9
	Chic., Milw., St. P. & Pac. 1953	10,660	1,128,884	1,157,829	33,597	48,100	64.0	3,323,221	1,481,294	358	17	51	12.0
	1952	10,663	1,247,163	1,287,399	51,688	50,443	63.8	3,483,126	1,562,236	401	47	77	14.7
	Chic., St. P., Minn. & Omaha 1953	1,606	169,824	172,929	5,956	5,673	69.2	392,691	180,432	69	3	28	28.0
	1952	1,606	198,338	200,903	6,187	6,101	70.8	417,562	198,512	65	..	26	28.6
	Duluth, Missabe & Iron Range 1953	568	212,474	213,402	1,566	9,854	51.0	1,024,080	627,223	63	..	4	6.0
	1952	569	223,151	224,378	1,952	10,153	50.4	1,064,076	640,968	81	..	6	6.9
	Great Northern 1953	8,291	1,269,181	1,272,334	36,888	50,027	61.3	3,959,498	1,969,307	333	83	39	8.6
	1952	8,301	1,289,917	1,296,508	51,316	53,440	63.4	4,121,110	2,098,597	352	98	60	11.8
	Minneap., St. P. & S. S. M. 1953	4,172	407,544	411,199	5,599	14,209	65.6	976,214	469,430	109	..	11	9.2
	1952	4,172	444,385	450,091	5,429	15,943	67.9	1,099,381	550,281	110	..	8	6.8
	Northern Pacific 1953	6,583	927,589	957,809	33,304	35,773	64.6	2,549,535	1,152,695	315	9	76	19.0
	1952	6,585	912,674	944,447	43,315	37,974	67.8	2,687,833	1,272,705	313	11	77	19.2
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.) 1953	13,095	2,379,538	2,418,813	71,570	103,765	67.5	6,854,697	2,734,024	546	115	59	8.2
	1952	13,072	2,499,191	2,614,203	112,446	106,924	67.1	7,046,439	2,775,291	587	50	128	16.7
	Chic., Burl. & Quincy 1953	8,833	1,266,977	1,276,534	43,880	53,047	67.3	3,495,524	1,562,812	333	15	38	9.8
	1952	8,773	1,300,157	1,314,380	50,570	55,287	67.6	3,696,406	1,689,672	357	14	103	21.7
	Chic., Rock I. & Pac. 1953	7,866	884,810	883,616	4,228	33,948	67.0	2,332,088	1,042,285	169	2	6	3.4
	1952	7,902	936,872	941,488	7,154	37,048	68.1	2,550,242	1,150,322	185	38	44	16.5
	Denver & R. G. Wn. 1953	2,313	348,560	376,760	43,168	16,321	71.7	1,127,617	531,473	89	27	38	24.7
	1952	2,333	406,545	444,361	52,835	18,240	71.2	1,251,149	567,967	108	21	23	15.1
	Southern Pacific 1953	8,058	2,174,881	2,200,580	281,715	92,956	63.4	6,518,605	2,631,679	658	45	163	18.8
	1952	8,059	2,355,247	2,488,870	313,008	101,632	65.5	6,997,859	2,870,340	718	5	145	16.7
	Union Pacific 1953	9,822	2,980,276	3,071,352	183,778	119,217	63.5	8,225,161	3,368,147	636	56	134	16.2
	1952	9,835	3,031,899	3,149,866	199,901	123,038	66.6	8,300,098	3,517,361	671	14	122	15.1
	Western Pacific 1953	1,190	247,772	254,281	13,490	12,228	74.7	765,328	357,531	40	11	4	7.3
	1952	1,190	265,789	269,865	17,259	12,568	71.2	811,090	373,522	43	1	4	8.3
Southwestern Region	International-Gt. Northern* 1953	1,104	147,887	147,867	178	5,434	67.6	376,075	178,933	48	..	4	7.7
	1952	1,104	167,266	167,266	....	6,104	69.0	456,380	212,459	45	8	7	11.7
	Kansas City Southern 1953	886	164,933	164,965	108	8,619	65.1	617,059	284,840	25	..	1	3.8
	1952	886	167,692	167,697	394	8,997	69.1	618,038	293,174	26	2	8	22.2
	Mo.-Kans.-Texas Lines 1953	3,230	362,143	362,143	3,887	14,147	65.4	921,212	398,798	91	7	..	..
	1952	3,230	387,929	387,929	4,426	14,838	66.6	963,682	418,904	90	7	8	7.6
	Missouri Pacific* 1953	6,917	1,179,163	1,182,000	14,273	46,263	68.2	3,088,174	1,379,741	291	39	64	16.2
	1952	6,932	1,249,254	1,253,459	15,169	49,422	68.8	3,269,222	1,465,580	297	29	61	15.8
	Texas & Pacific 1953	1,831	302,336	302,336	3,636	13,486	65.9	921,529	367,029	60	..	..	..
	1952	1,832	338,335	338,335	4,017	14,133	63.8	982,381	388,969	62	7	6	8.0
	St. Louis-San Francisco 1953	4,564	620,534	620,534	6,008	23,756	64.5	1,613,684	708,088	191	..	2	1.0
	1952	4,567	628,913	629,026	6,099	24,432	65.3	1,657,909	731,826	183	15	26	11.6
	St. Louis Southw. Lines 1953	1,555	295,250	295,306	3,995	13,260	73.3	810,352	362,239	58	21	3	3.7
	1952	1,562	326,865	326,925	4,467	14,113	73.5	858,814	383,902	54	21	13	14.8
	Texas & New Orleans 1953	4,279	680,907	680,907	10,848	25,439	65.3	1,755,677	782,556	185	..	32	14.7
	1952	4,280	801,498	802,418	26,119	28,227	63.2	1,976,237	858,248	221	..	24	9.8

For the Month of September 1953 Compared with September 1952

Region	Road and Year	Freight cars on line: Home	Foreign	Total	Per Cent B.O.	G.t.m.per train-hr. excl.locos. and tenders	G.t.m.per train-mi. excl.locos. and tenders	Net ton-mi. per train-mile	Net ton-mi. per l'd car-mile	Net ton-mi. per car-day	Car miles per car-day	Net daily ton-mi. per road-mi.	Train-miles per train-hour	Miles per loco. per day
New Eng. Region	Boston & Maine 1953	1,618	8,533	10,151	1.8	38,472	2,354	971	25.9	809	45.3	4,782	16.4	112.0
	1952	1,247	8,384	9,631	3.1	38,458	2,375	1,021	26.8	897	47.3	4,953	16.2	98.6
	N. Y., N. H. & Htfd 1953	2,111	14,070	16,181	2.6	39,406	2,444	1,040	26.3	625	34.5	5,972	16.1	134.4
	1952	1,058	15,787	16,845	2.7	36,243	2,448	1,082	27.0	643	33.4	5,858	14.8	115.9
Great Lakes Region	Delaware & Hudson 1953	3,885	5,613	9,498	7.3	62,474	3,318	1,797	36.6	1,299	48.4	15,257	18.9	158.7
	1952	3,302	6,830	10,132	3.9	60,187	3,341	1,817	37.3	1,276	45.9	16,414	18.1	61.8
	Del., Lack. & Western 1953	5,938	10,207	16,145	4.4	50,371	3,028	1,362	29.5	728	35.7	12,269	16.9	172.4
	1952	3,251	11,691	14,942	5.2	49,625	3,185	1,507	30.8	880	39.7	14,004	15.8	142.4
	Erie 1953	7,433	19,639	27,072	3.3	64,143	3,518	1,403	24.8	1,020	60.3	12,465	18.4	136.9
	1952	6,154	23,258	29,412	3.3	65,038	3,661	1,526	26.1	1,065	58.3	13,810	17.9	131.5
	Grand Trunk Western 1953	3,531	8,402	11,933	5.1	45,428	2,132	879	28.7	596	34.3	7,779	21.4	117.5
	1952	3,427	9,888	13,315	5.0	47,161	2,382	1,043	29.2	629	32.5	8,750	20.0	130.0
	Lehigh Valley 1953	6,557	9,494	16,051	5.7	66,745	3,468	1,622	33.0	742	33.2	10,461	19.6	248.9
	1952	3,505	9,071	12,576	6.1	65,439	3,433	1,714	33.4	1,013	41.3	10,632	19.5	248.3
	New York Central 1953	68,831	94,249	163,080	9.7	48,996	2,931	1,311	32.7	670	33.6	10,352	17.0	110.7
	1952	63,400	98,691	162,091	9.4	47,440	2,897	1,352	33.1	715	33.5	11,134	16.7	97.0
	New York, Chic. & St. L. 1953	7,211	17,874	25,085	5.8	47,730	2,712	1,241	31.9	1,170	55.7	14,112	17.9	111.7
	1952	5,300	20,364	25,664	6.3	49,672	2,930	1,389	33.2	1,380	59.6	15,993	17.3	118.9
	Pitts. & Lake Erie 1953	3,157	9,546	12,703	7.1	52,608	3,732	2,272	52.1	462	13.5	26,834	14.1	85.1
	1952	3,317	10,404	13,721	5.8	61,582	4,285	2,761	53.6	444	11.1	30,378	14.4	53.5
	Wabash 1953	8,174	11,528	19,702	10.4	63,396	2,826	1,107	25.4	1,054	62.5	8,728	22.6	142.6
	1952	6,704	13,441	20,145	7.0	58,841	2,792	1,189	26.8	979	51.7	8,436	21.3	105.8
Central Eastern Region	Baltimore & Ohio 1953	50,457	49,616	100,073	5.7	46,327	3,180	1,567	37.5	812	34.2	13,566	14.8	109.2
	1952	45,980	47,633	93,613	8.9	44,477	3,241	1,654	38.7	926	36.5	14,552	13.9	93.9
	Bessemer & Lake Erie 1953	4,748	2,252	7,000	11.0	99,821	6,805	4,471	75.7	1,235	25.5	39,924	15.0	64.7
	1952	4,434	1,791	6,225	14.4	104,979	6,635	4,337	76.4	1,376	29.4	48,203	16.3	56.3
	Central of New Jersey 1953	3,499	10,237	13,736	9.0	39,544	3,090	1,638	38.7	480	18.0	10,561	13.4	78.8
	1952	1,684	13,632	15,316	7.6	40,196	3,235	1,746	39.7	522	18.9	11,923	13.1	115.0
	Chicago & Eastern Ill. 1953	2,458	3,345	5,803	6.8	43,779	2,755	1,326	32.0	892	41.1	5,999	16.0	152.4
	1952	2,051	4,169	6,220	4.5	43,883	2,876	1,433	33.5	1,030	44.3	7,001	15.3	155.8
	Elgin, Joliet & Eastern 1953	6,929	10,852	17,781	5.4	20,346	2,613	1,404	42.9	236	8.6	17,759	8.2	101.8
	1952	6,619	14,207	20,826	5.4	21,904	3,278	1,830	44.5	271	9.1	23,299	7.0	110.6
	Pennsylvania System 1953	104,016	97,767	201,783	7.7	51,129	3,111	1,505	34.9	731	32.3	14,904	17.0	86.4
	1952	100,561	105,155	205,716	10.3	49,517	3,254	1,656	35.8	780	31.3	16,075	15.7	87.8
	Reading 1953	14,774	19,101	33,875	5.8	41,662	3,026	1,609	41.5	545	20.2	14,000	13.8	70.3
	1952	10,568	20,975	31,543	6.7	41,014	3,122	1,731	42.9	638	21.6	15,212	13.1	70.8
	Western Maryland 1953	5,436	2,695	8,131	5.0	43,528	3,162	1,773	46.3	1,176	40.3	11,316	14.0	63.1
	1952	4,029	3,196	7,225	4.0	39,786	2,909	1,683	46.4	1,330	42.6	11,691	14.0	61.5
Pocahontas Region	Chesapeake & Ohio 1953	51,408	24,277	75,685	3.2	69,509	3,851	2,134	47.5	1,221	44.5	18,073	18.1	80.6
	1952	40,311	28,299	68,610	3.3	73,053	4,302	2,431	49.2	1,535	53.6	21,334	17.2	78.0
	Norfolk & Western 1953	33,395	7,823	41,218	2.6	74,689	4,405	2,370	48.4	1,324	47.0	24,786	17.3	103.3
	1952	24,200	8,490	32,690	2.1	71,879	4,387	2,401	49.2	1,566	54.1	26,722	16.7	106.2
Southern Region	Atlantic Coast Line 1953	15,764	16,493	32,257	2.3	37,052	2,160	1,013	33.0	741	35.6	4,348	17.2	105.0
	1952	14,480	18,206	32,686	3.1	36,911	2,235	1,054	34.0	811	38.6	4,787	16.6	89.0
	Central of Georgia 1953	2,733	5,357	8,090	3.2	43,982	2,467	1,148	31.5	928	43.7	4,309	17.9	102.1
	1952	2,431	5,933	8,364	4.9	42,161	2,516	1,200	31.6	897	41.0	4,339	16.8	65.7
	Gulf, Mobile & Ohio 1953	4,422	11,267	15,689	3.4	65,461	3,432	1,657	32.1	1,091	48.1	6,177	19.1	123.1
	1952	3,468	11,856	15,324	3.0	64,895	3,495	1,715	32.1	1,196	50.6	6,610	18.6	127.9
	Illinois Central 1953	26,516	32,224	58,740	2.9	43,558	2,654	1,218	33.1	1,003	48.2	8,522	16.6	79.1
	1952	26,455	31,920	58,375	2.0	41,732	2,642	1,268	34.4	1,123	49.7	9,857	16.1	90.1
	Louisville & Nashville 1953	32,835	13,941	46,776	3.9	45,048	2,662	1,353	37.9	929	39.0	9,056	17.0	109.7
	1952	24,461	16,158	40,619	5.5	42,196	2,692	1,390	37.7	1,027	41.8	9,409	15.7	103.5
	Nash., Chatt. & St. Louis 1953	2,091	5,052	7,143	2.4	41,974	2,289	1,081	31.5	914	42.0	6,443	18.4	130.2
	1952	1,248	5,862	7,110	3.2	38,965	2,094	1,014	30.7	935	40.8	6,341	18.6	126.7
	Seaboard Air Line 1953	11,585	13,021	24,606	1.8	49,857	2,802	1,290	32.6	927	44.3	5,555	18.0	134.8
	1952	10,101	14,949	25,050	2.2	49,386	2,752	1,282	32.5	981	45.9	5,719	18.1	99.9
	Southern 1953	16,892	28,264	45,156	3.2	45,631	2,671	1,224	29.4	862	42.5	6,196	17.2	146.0
	1952	15,055	21,587	36,642	4.2	41,554	2,497	1,169	29.4	998	47.2	6,427	16.8	90.6
Northwestern Region	Chicago & North Western 1953	20,885	32,338	53,223	5.2	51,277	3,171	1,413	31.5	660	32.2	4,493	16.7	86.2
	1952	19,284	38,226	57,510	3.9	45,194	3,024	1,336	31.0	684	32.6	4,924	15.8	82.2
	Chicago Great Western 1953	1,028	4,720	5,748	3.6	73,348	4,055	1,899	31.3	1,516	68.8	5,982	18.1	144.6
	1952	1,280	5,770	7,050	2.7	69,328	4,019	1,845	30.9	1,221	57.5	6,299	17.3	148.5
	Chic., Milw., St. P. & Pac. 1953	32,508	33,716	66,224	7.1	51,044	2,957	1,318	30.8	719	36.5	4,632	17.3	101.2
	1952	29,827	36,176	66,003	3.9	47,237	2,816	1,263	31.0	772	39.0	4,884	16.9	91.9
	Chic., St. P., Minn. & Omaha 1953	1,195	7,881	9,076	4.5	34,377	2,376	1,092	31.8	670	30.5	3,745	14.9	65.9
	1952	1,099	8,590	9,689	3.8	32,602	2,202	1,047	32.5	681	29.6	4,120	15.5	80.5
	Duluth, Missabe & Iron Range 1953	14,864	912	15,776	4.7	81,438	5,057	3,097	63.7	1,329	40.9	36,809	16.9	123.5
	1952	14,299	2,420	16,719	2.3	80,906	4,975	2,997	63.1	1,251	39.3	37,549	17.0	101.5
	Great Northern 1953	23,465	24,775	48,240	3.3	51,610	3,165	1,574	39.4	1,348	55.9	7,917	16.5	103.3
	1952	23,047	24,373	47,420	3.0	50,135	3,243	1,651	39.3	1,374	55.1	8,427	15.7	95.7
	Minneap., St. P. & S. S. M. 1953	6,633	8,605	15,238	5.7	45,690	2,405	1,156	33.0	985	45.4	3,751	19.1	125.7
	1952	6,360	10,182	16,542	4.9	44,416	2,498	1,250	34.5	1,116	47.6	4,397	18.0	137.2
	Northern Pacific 1953	20,751	17,469	38,220	4.6	50,610	2,767	1,251	32.2	976	46.9	5,837	18.4	89.7
	1952	17,874	17,796	35,670	4.1	50,551	2,966	1,404	33.5	1,127	49.6	6,442	17.2	89.8
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.) 1953	46,313	34,546	80,859	3.4	64,796	2,893	1,154	26.3	1,111	62.5	6,969	22.5	122.3
	1952	43,722	36,040	79,762	4.1	61,102	2,832	1,116	26.0	1,120	64.3	7,077	21.7	127.4
	Chic., Burl. & Quincy 1953	20,913	23,484	44,397	3.3	53,484	2,765	1,236	29.5	1,184	59.7	5,898	19.4	115.5
	1952	20,377	24,573	44,950	3.2	55,021	2,850	1,303	30.6	1,272	61.5	6,420	19.4	103.0
	Chic., Rock I. & Pac. 1953	11,259	21,433	32,692	4.8	50,125	2,640	1,180	30.7	1,068	51.9	4,417	19.0	174.8
	1952	12,887	23,906	36,793	3.2	49,175	2,732	1,232	31.0	1,032	48.8	4,852	18.1	126.9
	Denver & R. G. Wn. 1953	6,696	8,739	15,435	2.8	56,570	3,246	1,530	32.6	1,136	48.7	7,659	17.4	97.8
	1952	6,581	8,934	15,515	3.7	54,151	3,086	1,401	31.1	1,163	52.4	8,115	17.6	114.9
	Southern Pacific 1953	29,151	46,265	75,416	2.3	52,563	3,026	1,222	28.3	1,180	65.7	10,886	17.5	107.0
	1952	28,392	54,275	82,667	2.7	50,136	3,011	1,235	28.2	1,178	63.7	11,872	16.9	116.1
	Union Pacific 1953	30,702	38,793	69,495	2.1	68,488	2,793	1,144	28.3	1,571	87.5	11,431	24.8	134.6
	1952	27,822	44,255	72,077	2.5	64,482	2,779	1,178	28.6	1,616	84.8	11,921	23.6	143.7
	Western Pacific 1953	2,296	3,754	6,050	5.2	75,040	3,102	1,449	29.2	1,962	89.8	10,015	24.3	166.7
	1952	2,425	5,476	7,901	4.8	70,358	3,081	1,419	29.7	1,734	81.9	10,463	23.1	204.2
Southwestern Region	International-Gt. Northern* 1953	810	5,652	6,462	3.4	50,419	2,545	1,211	32.9	901	40.5	5,403	19.8	100.0
	1952	857	7,679	8,536	2.7	52,639	2,743	1,277	34.8	840	35.0	6,415	19.3	97.3
	Kansas City Southern 1953	794	5,701	6,495	2.6	75,031	3,763	1,737	33.1	1,416	65.8	10,716	20.1	235.8
	1952	998	6,675	7,673	3.6	75,564	4,709	1,760	32.6	1,287	57.1	11,030	20.5	165.9
	Mo.-Kans.-Texas Lines 1953	3,793	7,048	10,841	4.3	52,485	2,552	1,105	28.2	1,221	66.2	4,116	20.6	135.8
	1952	3,162	7,608	10,770	5.7	49,301	2,487	1,081	28.2	1,350	71.8	4,323	19.8	132.2
	Missouri Pacific* 1953	16,950	18,016	34,966	3.4	56,440	2,630	1,175	29.8	1,338	65.8	6,649	21.6	107.8
	1952	17,215	18,215	35,430	2.5	54,847	2,633	1,180	29.7	1,356	66.5	7,047	21.0	116.3
	Texas & Pacific 1953	2,265	7,484	9,749	4.3	69,039	3,054	1,216	27.2	1,266	70.6	6,682	22.7	181.9
	1952	2,265	7,547	9,812	3.3	66,212	2,905	1,150	27.5	1,322	75.4	7,077	22.8	160.3
	St. Louis-San Francisco 1953	11,338	13,445	24,783	6.7	45,387	2,605	1,143	29.8	989	51.4	5,172	17.5	119.8
	1952	8,081	15,824	23,905	3.1	45,251	2,644	1,167	30.0	1,050	53.7	5,341	17.2	105.6
	S . Louis Southw. Lines 1953	2,122	4,689	6,811	1.5	52,757	2,747	1,228	27.3	1,719	85.8	7,765	19.2	126.2
	1952	1,794	5,566	7,360	1.6	52,630	2,631	1,176	27.2	1,723	86.2	8,193	20.0	136.9
	Texas & New Orleans 1953	5,421	16,559	21,980	1.5	49,488	2,595	1,157	30.8	1,178	58.6	6,096	19.2	114.3
	1952	5,287	19,528	24,815	2.7	46,149	2,484	1,079	30.4	1,167	60.7	6,684	18.7	119.9

*Report of trustee or trustees.

Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to revision.

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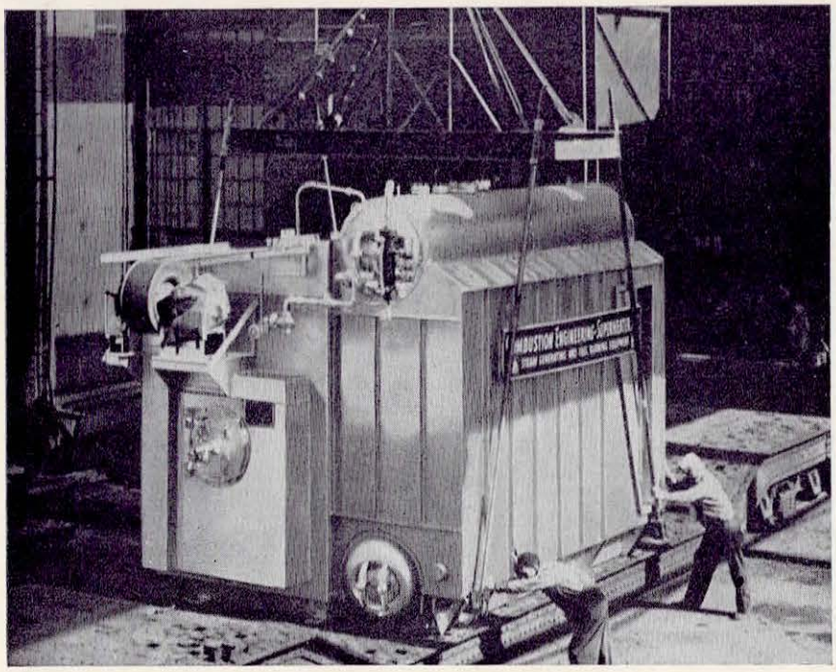

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Letters from Readers

Why Let Railroads Lie Idle?

INDIANAPOLIS, IND.

TO THE EDITOR:

The editorial on page 23 of the issue of October 12, dealing with "broad-gaging" railroad men, is interesting and thought provoking, especially paragraphs 5 and 6.

The railroads of North America own and control a network of steel highways that offer land transportation with speed and safety to the extreme limits of the present day knowledge of mankind. They do not greatly interfere with or inconvenience the public and are unmatched in their potentialities by any other method of accomplishing this essential service. They are a truly marvelous achievement and might without undue exaggeration be included in the wonders of the world.

But, disregarding a few unusual exceptions, these railroads are not being used. They can earn money for their owners only while they are in use and it is a sad fact that the actual *time* any given section of track is serving the purpose for which it was constructed, that is by having equipment passing over it, is but a small percentage of the 24 hours it is available every day. And this, while tractor-trailers are running almost bumper to bumper over the (often adjoining) highways which the railroad helped to build.

And while these valuable tracks lie idle, the railroads are trying by various but equally futile means to do something about their slipping business, even to the point of catching a few crumbs of this revenue by hauling the trailers for the truckers! In the last paragraph you mention that the British government has conceded complete freedom of competition to the railways, presumably meaning that the railroads can go into the trucking business. This might be all right for Britain but why in Heaven's name would the American railroads want to go back to highway hauling when they have their own superb private rights of way?

The railroads can do anything the trucks can do, and can do it faster and better. With present day possibilities in motive power and equipment units convertible from rail to road, there is no reason for still attempting to handle short haul, small lot freight by mixing it with heavy freight trains and having merchandise cars for relatively short movement hauled out to classification yards for inclusion with long heavy trains, when they should and could be on their way to destination. Physical facilities and equipment can be made available and the rails are there waiting! The trend of life is not organized nor can it be controlled or directed to any ap-

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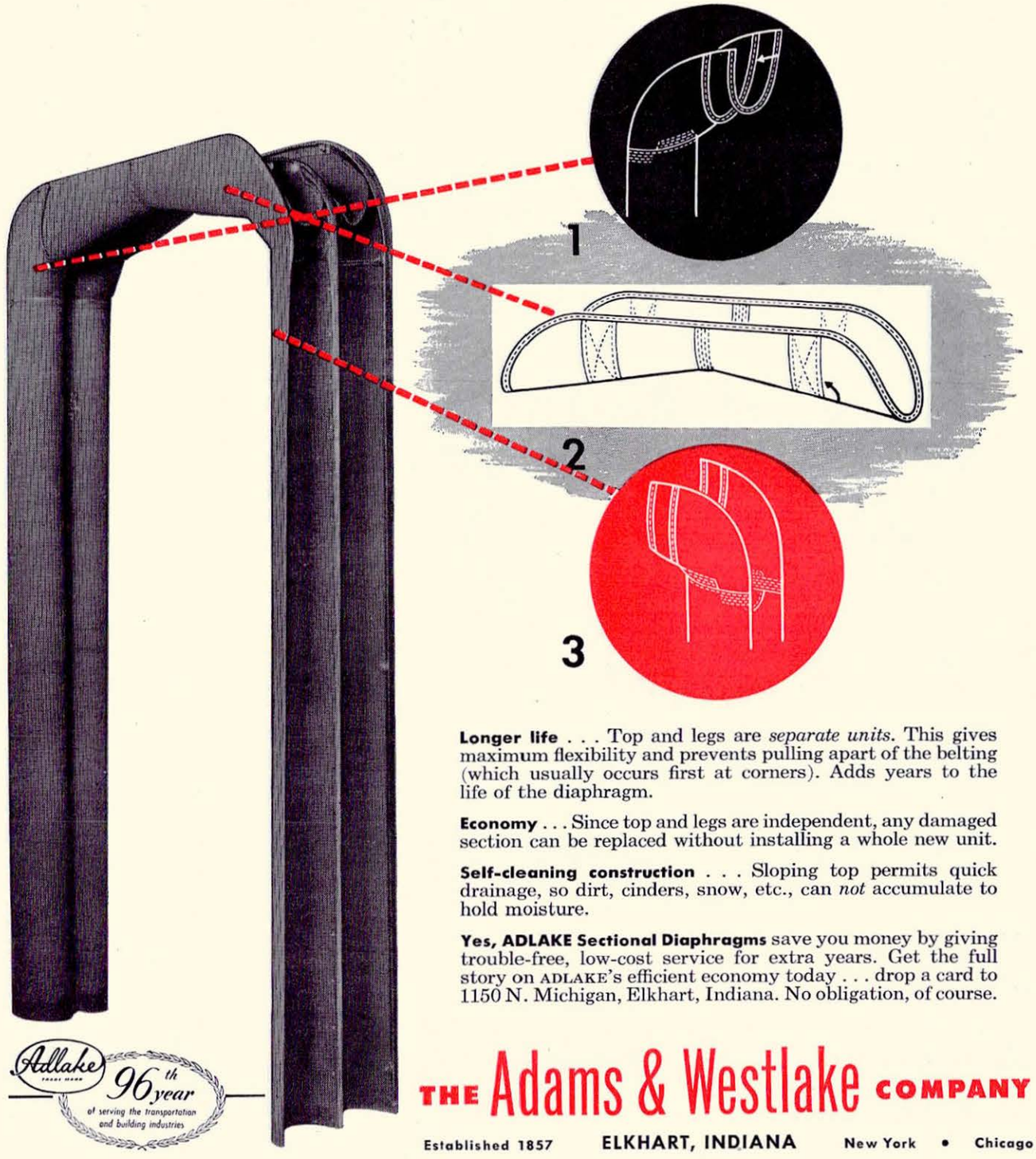

Longer life . . . Top and legs are *separate units*. This gives maximum flexibility and prevents pulling apart of the belting (which usually occurs first at corners). Adds years to the life of the diaphragm.

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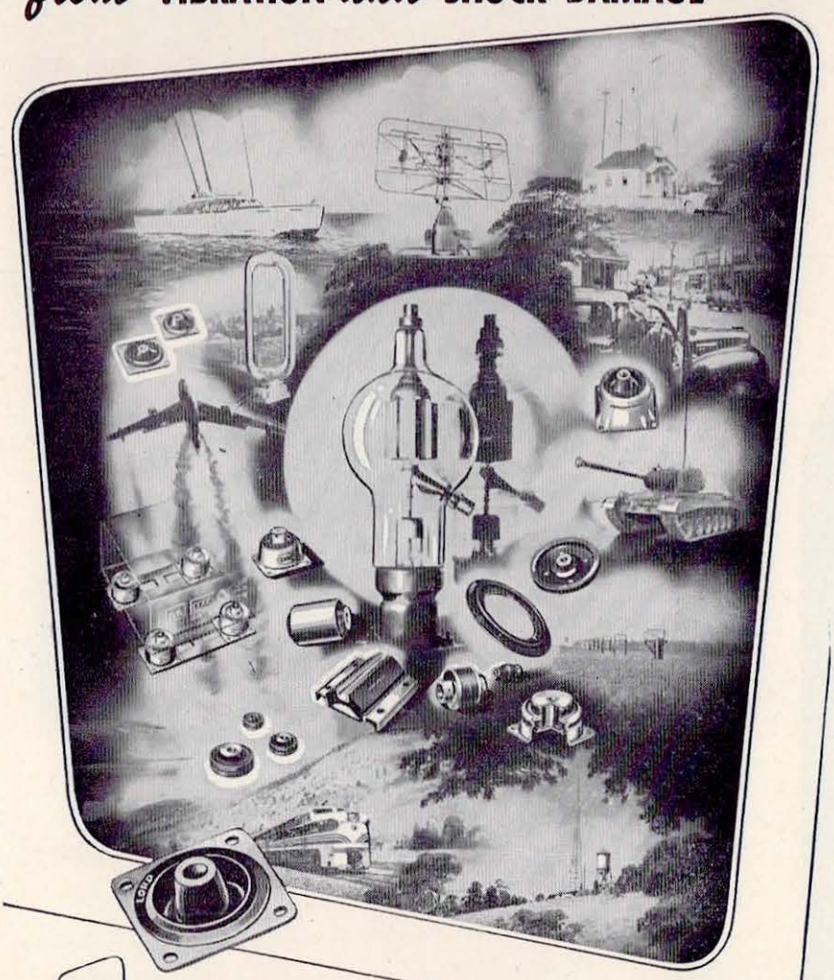

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preciable degree; success lies in moving with it and adapting our offerings to the demands of the people. Quixotic attempts to change the trend can only result in disaster for the would be changer.

It is an anomaly that the giant corporations which developed the modern tractor that made this new form of transport possible, are the same who revolutionized the motive power of the railroads and are getting a larger share of what profits the rails *are* making than are the stockholders. The minds which accomplished these things were keen with vivid imagination, with vision always toward the accomplishment of what is desirable. Difficulties to such minds are only stepping stones. As Kettering said, "The only time you must not fail is the last time you try." Maybe the railroads could borrow some of this eager, panting, vibrating intelligence and see what *can* be accomplished. The government did.

"A.B.C."

•

"Piggyback" Fundamentals

PORTLAND, MAINE

TO THE EDITOR:

Not every railroad man approves "piggyback" operation, as witness the letters in the November 16 *Railway Age* (page 53). Unfortunately most of these criticisms are based on misapprehensions on which I should like to comment.

According to the writer who signed himself "A Railroad Vice-President" the piggyback rates produce car-mile earnings of 28.1 cents to 30.9 cents, in contrast to average car-mile earnings of 63.3 cents. He further comments on the great danger to railroad earnings in the reduction in average railroad revenue from about 25 per cent of the first class rate to about 10 per cent.

This comparison is not a proper one. The average car-mile earnings cited of 63.3 cents apply on traffic moving as individual units from private sidings at origin to private sidings at destination. The actual origin and actual destination could be anywhere within switching limits. By contrast the trailer-car rates apply only from one fixed point in the railroad terminal at origin to one fixed point in the railroad terminal at destination, and the traffic moves in solid blocks. In the first case there are very heavy terminal yard costs, in latter case very much less. Hence, while the trailer-car mile revenue is lower than that of other traffic, so are its expenses.

There is another factor about piggyback operation which makes it economical—its low empty car mileage. Trailers which go have to come back. If they come back empty they pay a half rate, which in a sense may be considered as a 50 per cent increase in the rate on the going movement (a contrast to empty returned box cars). This, however, is relatively rare. Us-

ually both going and returning movements are loaded. Of course, there must be some empty movement, but it is probably less than that of box cars and much less than that of more specialized types of cars.

The second objection cited is that by publishing trailer-car rates the rails are placing in the hands of their competitors the power to destroy railroad traffic. Your correspondent presented a table showing the relationship to the first class rate of piggyback rates and of rates applicable on various commodities. This comparison does not bring out a serious danger for a number of reasons. The first is the one already given in explaining the difference between trailer-car and ordinary carload service.

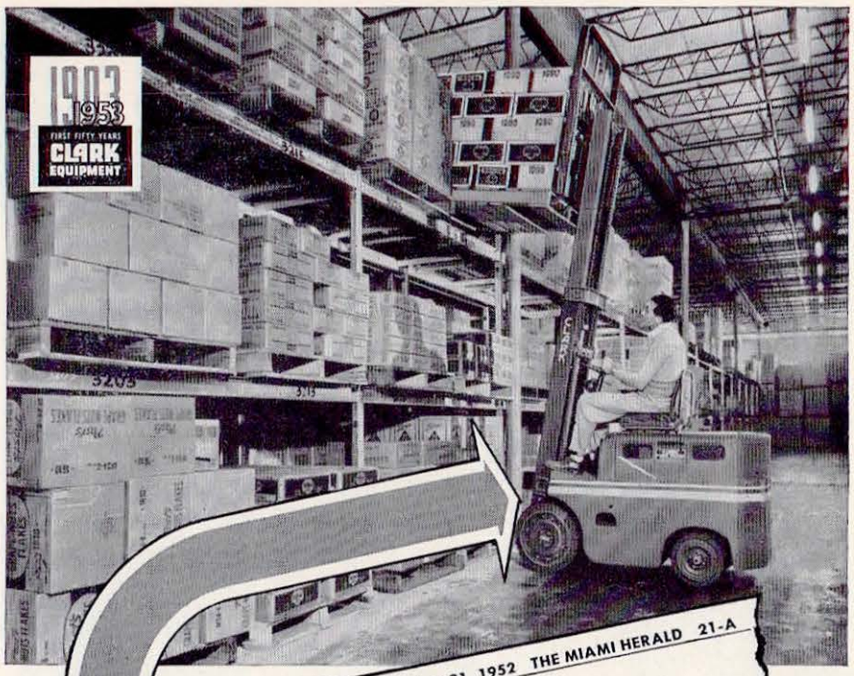
An even more important reason why this comparison is not as vital as might be is to be found in the procedure which the railroad used in establishing the level at which trailer-car rates were initially published. The carrier owned a trucking company operating between the cities proposed to be served by the trailer-car operation. The trailer-car rates were set at a level which represented the money the highway subsidiary would save if it were to deliver its trailers to the railroad for piggyback movement instead of running them over the road. In other words, the level of trailer-car rates as initially established gave the trucking companies nothing which they did not already possess in the matter of transportation costs. If there be any danger to railroad revenues in the piggyback rates, that danger already existed in level of highway operating costs—and the piggyback operation at least has the advantage that it keeps the line-haul movement on the railroad—and recovers some line-haul traffic previously lost.

The piggyback rate, moreover, is tailored to the truckload lot. A trailer loaded with more freight than the specified maximum for a unit of its size pays a punitive rate on the excess weight.

These comments also show why the piggyback rates will not become the ceiling on all rates, any more than truck costs for the line-haul operation alone, without terminal costs, represent the ceiling on truck rates.

Piggyback rates are not, as already explained, properly comparable with point-to-point carload rates. They are perhaps a little more nearly comparable with the divisions which railroads receive on overhead traffic, which a railroad receives from one connection, handles over the road and delivers to another connection. As is well known, the divisions on such traffic produce revenue which is usually lower than the revenue produced by the rates covering the local movement of the same commodity between the same two interchange points as origin and destination.

There is still another weakness in



Tuesday, October 21, 1952 THE MIAMI HERALD 21-A

Financial News

Winn & Lovett's Earnings On Rise

By United Press

JACKSONVILLE—Winn & Lovett Grocery Co. reported for the quarter ended Sept. 20 sharply higher earnings, reflecting economies achieved through mechanization in warehousing and merchandise handling.

Net for the first quarter of the current fiscal year, totaled $600,597, or 44 cents a share on common, compared with $409,342 or 29 cents in the same quarter last year. Net sales of $41,851,672 compared with $36,763,499.

As of Sept. 20 the food chain had in operation 181 retail outlets a[illegible] in Florida.

How To Make More Money

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"Mechanization" saved more than 50% of Winn & Lovett's handling bill. "Mechanization" in this case means a fleet of CLARK fork trucks and towing tractors, operated on a well-planned schedule. These savings, together with increased retail volume and retail operating improvements, resulted in "sharply higher earnings," and the company made financial headlines.

The moral of this story is this:

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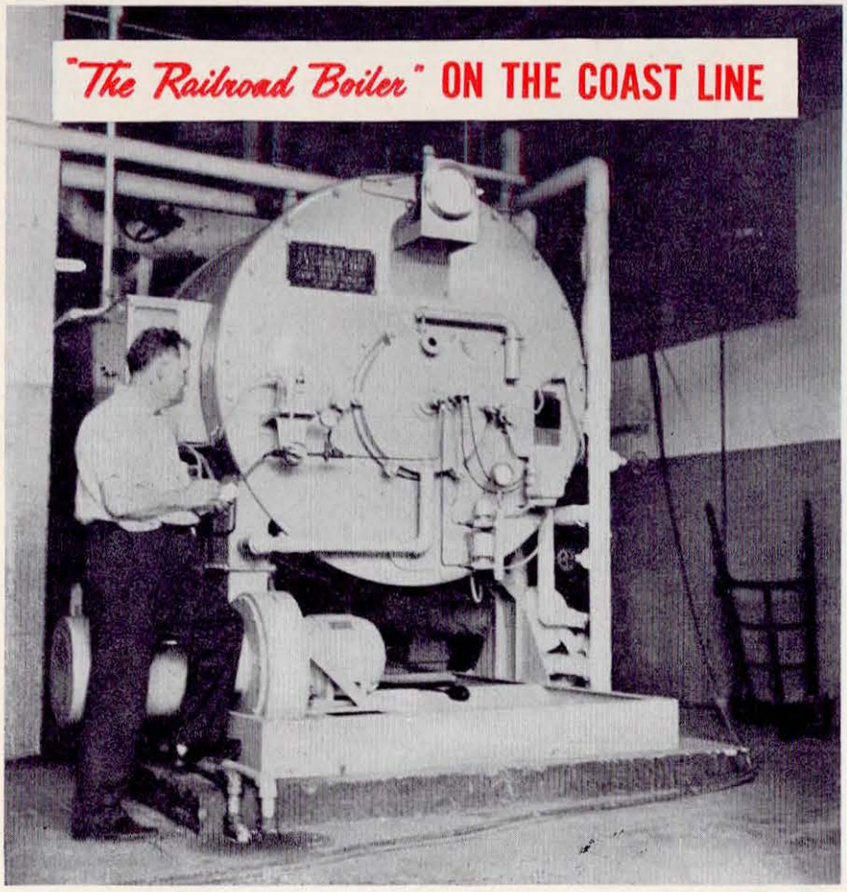

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the criticisms of the level of trailer-car rates. It lies in the matter of frequency of loading of an individual car. Add up the number of revenue cars handled by a railroad for a week. Then add up the number of cars on line for each day of the week. Then divide the total of cars on line (i.e. car-days) by the total of revenue loads handled. The quotient will give you the number of car-days a railroad has to incur and pay for in order to receive a revenue load. I suspect you will find that on many roads the ratio is more than six car-days for each revenue load.

Compare the piggyback situation. You don't, to be sure, get a load for every car every day. Not many firms ship on Sundays and many not on Saturdays and sometimes business is a little slack. But in a week I suspect you would find you got 3½ to 4 loads per car. This amounts to a load every other day as contrasted to a load every six days on the normal run of traffic. Suppose a railroad earned revenue of $100 per car handled on regular traffic and incurred 6 car-days expense to do it. Then look at its trailer-car operation earning only $60 per car but securing loads at the rate of one every other day. In six car days this would amount to $180 as contrasted with the $100 earned by regular traffic in the same number of car-days! And keep in mind the lower costs of trailer-car operation as contrasted with normal carload operations!

I should like to comment briefly, too, on the thoughtful letter of H. P. Edwards [chairman and general manager, Atlantic & East Carolina], also in the November 16 *Railway Age.*

Mr. Edwards speaks of trains of mixed trailer-cars and normal box car traffic. For service reasons I have serious doubts that this will be generally practical. Piggyback traffic demands, requires, and obtains a sure-fire precision of service which is inconsistent with much present carload service. Moreover to obtain the economies which will permit profitable operation at the required rates, piggyback runs will probably be between cities where circumstances permit the moving of solid blocks of cars—preferably in separate trains but certainly not interspersed with normal traffic.

Mr. Edwards' interesting suggestion that piggyback service be used in conjunction with l.c.l. p.&d. service has already been tried with modest success. A major shipper can load his traffic for selected points in another city in correct unloading order, seal the trailer and never have it touched until it reaches the receiving platform at destination. Usually, however, such shippers presently graduate to carload type trailer-car service as their volume grows.

When it comes to putting freight from several shippers in a single trailer there are complications. It would be a rare Chicago pick-up driver who

what happened there...

Scaling, peeling paint that costs a company a heavy burden in maintenance charges, depreciated equipment, repairs, and poor public opinion.

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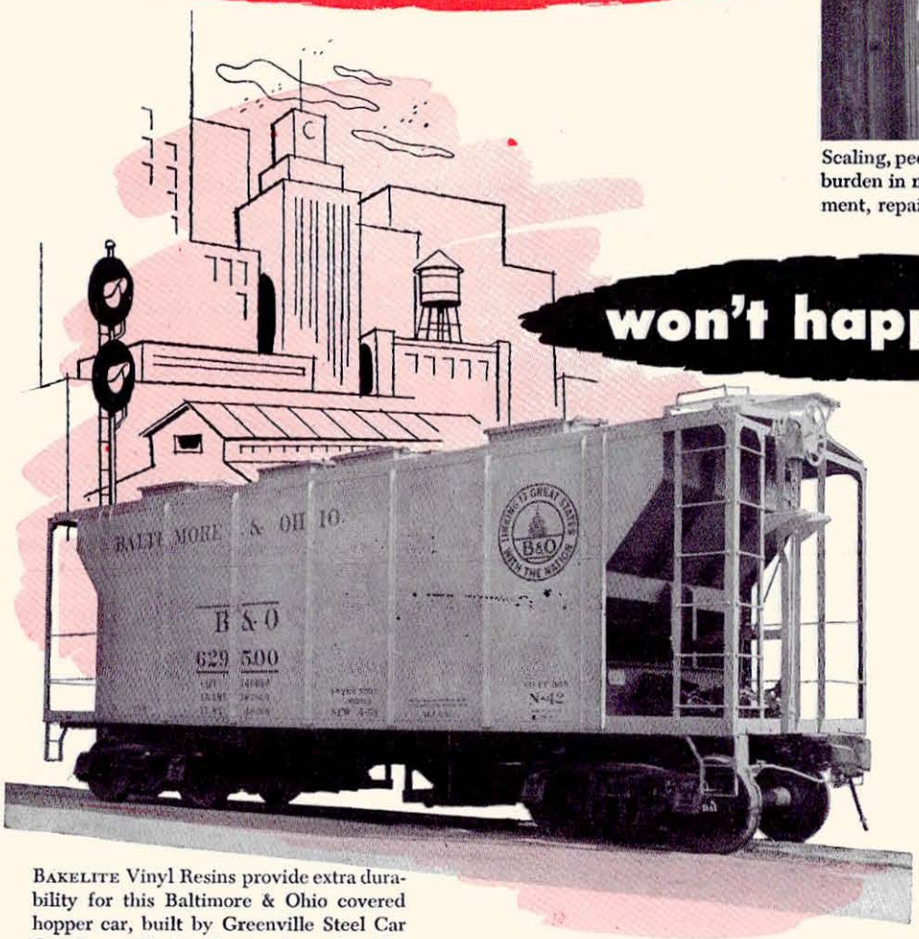

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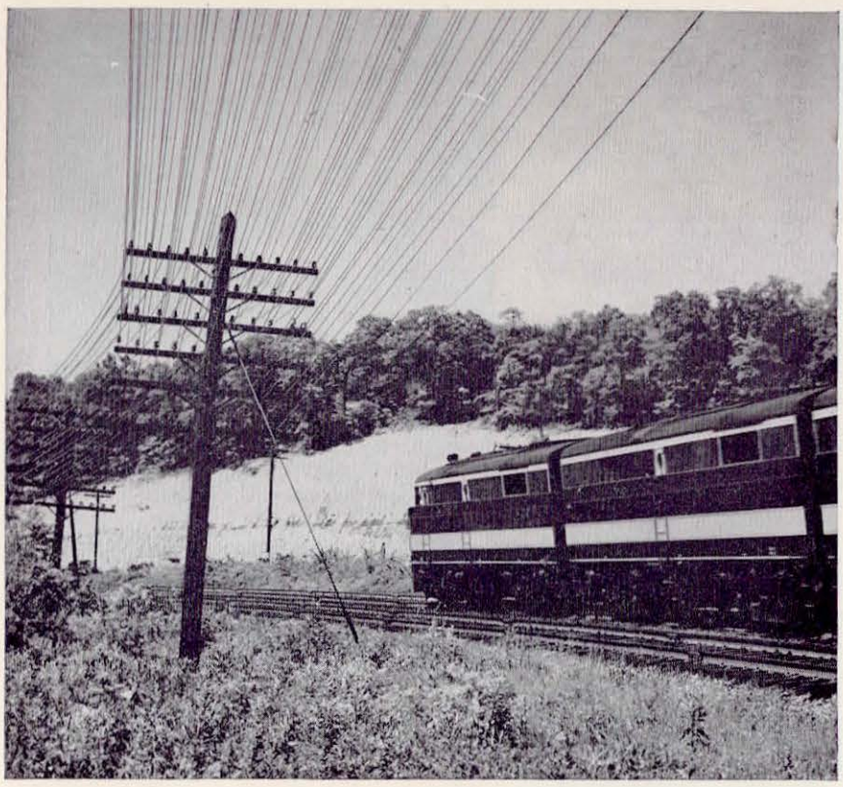

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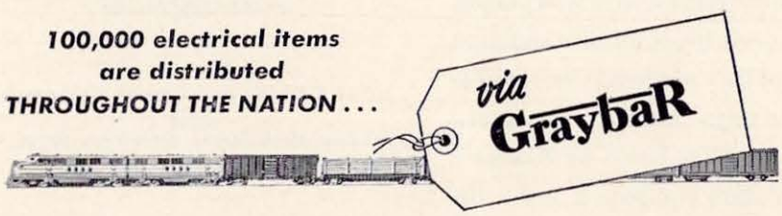

OFFICES AND WAREHOUSES IN OVER 100 PRINCIPAL CITIES

could stow in correct New York delivery order the freight from several Windy City shippers. And even if he could, the natural dispersion of receivers throughout the metropolitan area would probably produce an uneconomical delivery route.

I have no connection with trailer-car operation or with railroads most active in the field. The views expressed are wholly my own.

ERIC PARKMAN SMITH

Current Publications

PERIODICAL ARTICLE

TOMORROW'S NEW TRAINS ARE HERE, by Terry Morris. Redbook Magazine, December 1953, pp. 42-45, 80-81. McCall Corporation, 230 Park ave., New York 17. Single copies, 35 cents.

The author takes the reader on a 4,000-mile tour of our modern railroads and shows him (or her) how to travel like a millionaire on a low budget. In addition to describing the many new trains, and their special equipment and services, she sets up on one page in easy-to-read fashion such data as types and cost of railroad travel, types of food service and cost, tipping, and holiday travel hints.

PAMPHLETS

QUESTIONS AND ANSWERS ON THE 24-RL LOCOMOTIVE BRAKE EQUIPMENT. 102 pages, diagrams. Air Brake Association, Railway Exchange bldg., Chicago 4. $3, or $2.50 in orders of five or more.

The 24RL locomotive brake equipment is now accepted as standard for new freight and passenger locomotives on American and Canadian railroads, and has been for four or five years. In 1949 the Air Brake Association brought out a book with the above title which was written in question and answer form so as to be easily followed. This book proved to be popular and has now been completely revised. Necessary additions have been made to cover every part of 1953 locomotive brake equipment details. The book is intended especially for the information of air-brake foremen, inspectors, locomotive supervisors and crews.

•

LOADING DEFENSE MATERIAL ON OPEN-TOP CARS. Pamphlet MD-7, 303 pages, illustrations. Association of American Railroads, 59 East Van Buren st., Chicago 5, Ill. 46 cents a copy; $40 a hundred.

MD-7 is an up-to-date revision of present loading methods for U.S. Department of Defense shipments, and contains necessary general rules, loading information and 100 figures covering practically all defense commodities

(Continued on page 135)

Nine Months' Buying Tops 1952

Purchases by domestic railroads of all types of materials during the first nine months of 1953 totaled $1,789,885,000, compared with $1,785,632,000 in the comparable period last year, as shown in an accompanying table. This is the first time in 1953 that *Railway Age's* regularly published compilation of railroad purchases has shown a greater total for the current year than in the compared 1952 period.

Purchases of rail, and manufactured goods classified as "other material," were, in the first three quarters of 1953 sharply higher than in the like 1952 period. Three categories—equipment commitments and purchases of crossties and fuel—registered a decline.

September 1953 purchases amounted to $193,494,000, compared with $228,308,000 in September last year. Purchases last September exceeded those of September 1952 in three categories—rail, crossties and "other material"—but were lower in fuel, while commitments to purchase locomotives and cars were sharply reduced.

1953 RAILWAY PURCHASES*

	September (000)	Nine Months Total 1953 (000)	Nine Months Total 1952 (000)
Equipment**	$ 32,939	$342,997	$423,303
Rail	12,313	88,092	53,210
Crossties	9,865	75,885	80,144
Other Material	96,770	923,245	827,216
Total from Manufacturers	$151,887	$1,430,219	$1,383,873
Fuel	41,607	359,666	401,759
Grand Total	$193,494	$1,789,885	$1,785,632

*Subject to revision
**Amount placed on order

SEPTEMBER* PURCHASES OF MANUFACTURED GOODS (Excl. Equip. & Fuel)

Year	Sept. '53 Compared to Other Septs. (000) Amt.	% Change
1947	$ 96,102	+24
1948	115,892	+ 3
1949	73,661	+61
1950	96,046	+24
1951	118,705	——
1952	106,620	+12
1953	118,948	

Month	Sept. '53 Compared to Other Months '53 (000) Amt.	% Change
Jan.	$111,071	+ 7
Feb.	107,658	+10
Mar.	123,233	— 3
Apr.	121,685	— 2
May	124,115	— 4
June	125,715	— 5
July	126,225	— 6
Aug.	128,572	— 7
Sept.	118,948	

Year	Nine Months Totals '53 And Other Years (000) Amt.	% Change
1947	$ 912,022	+19
1948	991,910	+10
1949	890,133	+22
1950	799,616	+36
1951	1,204,317	—10
1952	960,570	+13
1953	1,087,222	

SEPTEMBER* PURCHASES OF RAIL

Year	Sept. '53 Compared to Other Septs. (000) Amt.	% Change
1947	$ 7,121	+73
1948	9,383	+32
1949	8,136	+51
1950	8,282	+49
1951	8,000	+54
1952	9,441	+30
1953	12,313	

Month	Sept. '53 Compared to Other Months '53 (000) Amt.	% Change
Jan.	$10,102	+22
Feb.	7,934	+55
Mar.	10,677	+15
Apr.	9,186	+34
May	8,357	+47
June	10,179	+21
July	8,978	+37
Aug.	10,366	+19
Sept.	12,313	

Year	Nine Months Totals '53 And Other Years (000) Amt.	% Change
1947	$64,429	+37
1948	70,787	+24
1949	86,715	+ 2
1950	74,934	+18
1951	77,592	+14
1952	53,210	+66
1953	88,092	

SEPTEMBER* PURCHASES OF CROSSTIES

Year	Sept. '53 Compared to Other Septs. (000) Amt.	% Change
1947	$7,313	+35
1948	9,093	+ 8
1949	7,296	+35
1950	4,190	+135
1951	9,305	+ 6
1952	8,226	+20
1953	9,865	

Month	Sept. '53 Compared to Other Months '53 (000) Amt.	% Change
Jan.	$7,281	+35
Feb.	6,506	+52
Mar.	8,006	+23
Apr.	8,276	+19
May	8,621	+14
June	8,878	+11
July	8,834	+12
Aug.	9,618	+ 3
Sept.	9,865	

Year	Nine Months Totals '53 And Other Years (000) Amt.	% Change
1947	$73,705	+ 3
1948	61,080	+24
1949	68,021	+12
1950	40,573	+87
1951	69,717	+ 9
1952	80,144	— 5
1953	75,885	

*Subject to revision.

SEPTEMBER* PURCHASES OF OTHER MATERIAL

Year	Sept. '53 Compared to Other Septs. (000) Amt.	% Change
1947	$ 81,668	+18
1948	97,416	— 1
1949	58,229	+66
1950	83,574	+16
1951	101,400	— 5
1952	88,953	+ 9
1953	96,770	

Month	Sept. '53 Compared to Other Months '53 (000) Amt.	% Change
Jan.	$ 93,688	+ 3
Feb.	93,218	+ 4
Mar.	104,550	— 7
Apr.	104,223	— 7
May	107,137	—10
June	106,658	— 9
July	108,413	—11
Aug.	108,588	—11
Sept.	96,770	

Year	Nine Months Totals '53 And Other Years (000) Amt.	% Change
1947	$ 773,888	+20
1948	860,043	+ 7
1949	735,397	+26
1950	684,109	+35
1951	1,057,008	—13
1952	827,216	+12
1953	923,245	

SEPTEMBER* PURCHASES OF FUEL

Year	Sept. '53 Compared to Other Septs. (000) Amt.	% Change
1947	$56,172	—26
1948	69,743	—40
1949	34,848	+19
1950	51,382	—19
1951	45,004	— 8
1952	43,249	— 4
1953	41,607	

Month	Sept. '53 Compared to Other Months '53 (000) Amt.	% Change
Jan.	$45,020	— 8
Feb.	40,060	+ 4
Mar.	40,583	+ 3
Apr.	38,862	+ 7
May	36,974	+13
June	39,069	+ 6
July	38,779	+ 7
Aug.	38,712	+ 7
Sept.	41,607	

Year	Nine Months Totals '53 And Other Years (000) Amt.	% Change
1947	$492,017	—27
1948	626,317	—43
1949	442,295	—19
1950	436,168	—18
1951	465,611	—23
1952	401,759	—10
1953	359,666	

SEPTEMBER* TOTAL PURCHASES (Excl. Equip.)

Year	Sept. '53 Compared to Other Septs. (000) Amt.	% Change
1947	$152,274	+ 5
1948	185,635	—14
1949	108,509	+48
1950	147,428	+ 9
1951	163,709	— 2
1952	149,869	+ 7
1953	160,555	

Month	Sept. '53 Compared to Other Months '53 (000) Amt.	% Change
Jan.	$156,091	+ 3
Feb.	147,718	+ 9
Mar.	163,816	— 2
Apr.	160,547	——
May	161,089	——
June	164,784	— 3
July	165,004	— 3
Aug.	167,284	— 4
Sept.	160,555	

Year	Nine Months Totals '53 And Other Years (000) Amt.	% Change
1947	$1,404,039	+ 3
1948	1,618,227	—11
1949	1,332,428	+ 9
1950	1,235,784	+17
1951	1,669,928	—13
1952	1,362,329	+ 6
1953	1,446,888	

SEPTEMBER* INVENTORIES OF RAIL

Year	Sept. '53 Compared to Other Septs. (000) Amt.	% Change
Sept. 1, 1947	$29,766	+29
1948	32,212	+19
1949	39,057	— 2
1950	37,452	+ 2
1951	41,226	— 7
1952	31,085	23
1953	38,384	

Month	Sept. '53 Compared to Other Months '53 (000) Amt.	% Change
Jan. 1	$35,476	+ 8
Feb.	39,325	— 2
Mar.	42,395	— 9
Apr.	43,102	—11
May	43,752	—12
June	43,514	—12
July	41,608	— 8
Aug.	41,590	— 8
Sept.	38,384	

SEPTEMBER* INVENTORIES OF CROSSTIES

Year	Sept. '53 Compared to Other Septs. (000) Amt.	% Change
Sept. 1, 1947	$83,771	+28
1948	78,309	+37
1949	92,126	+16
1950	83,869	+28
1951	88,840	+21
1952	112,288	— 5
1953	107,111	

Month	Sept. '53 Compared to Other Months '53 (000) Amt.	% Change
Jan. 1	$110,135	— 3
Feb.	113,813	— 6
Mar.	116,024	— 8
Apr.	115,998	— 8
May	118,183	— 9
June	109,837	— 2
July	106,017	+ 1
Aug.	107,353	——
Sept.	107,111	

SEPTEMBER* INVENTORIES OF OTHER MATERIAL

Year	Sept. '53 Compared to Other Septs. (000) Amt.	% Change
Sept. 1, 1947	$555,498	+12
1948	611,861	+ 1
1949	595,665	+ 4
1950	515,005	+21
1951	703,244	—12
1952	663,988	— 6
1953	621,006	

Month	Sept. '53 Compared to Other Months '53 (000) Amt.	% Change
Jan. 1	$624,671	— 1
Feb.	622,333	——
Mar.	625,576	— 1
Apr.	629,952	— 1
May	620,952	——
June	622,000	——
July	621,924	——
Aug.	619,652	——
Sept.	621,006	

SEPTEMBER* INVENTORIES OF SCRAP

Year	Sept. '53 Compared to Other Septs. (000) Amt.	% Change
Sept. 1, 1947	$ 9,978	+81
1948	15,927	+13
1949	16,241	+11
1950	13,538	+34
1951	17,040	+ 6
1952	18,746	— 4
1953	18,088	

Month	Sept. '53 Compared to Other Months '53 (000) Amt.	% Change
Jan. 1	$19,194	— 6
Feb.	20,372	—11
Mar.	17,923	+ 1
Apr.	17,208	+ 5
May	18,870	— 4
June	17,302	+ 5
July	16,698	+ 8
Aug.	18,172	——
Sept.	18,088	

SEPTEMBER* INVENTORIES OF FUEL

Year	Sept. '53 Compared to Other Septs. (000) Amt.	% Change
Sept. 1, 1947	$63,026	—26
1948	91,850	—51
1949	71,341	—34
1950	51,429	— 9
1951	61,269	—23
1952	53,126	—12
1953	46,926	

Month	Sept. '53 Compared to Other Months '53 (000) Amt.	% Change
Jan. 1	$50,354	— 7
Feb.	48,616	— 3
Mar.	48,349	— 3
Apr.	47,207	— 1
May	43,695	+ 7
June	44,169	+ 6
July	47,009	——
Aug.	46,315	+ 1
Sept.	46,926	

SEPTEMBER* TOTAL INVENTORIES†

Year	Sept. '53 Compared to Other Septs. (000) Amt.	% Change
Sept. 1, 1947	$742,039	+12
1948	830,159	——
1949	814,430	+ 2
1950	701,293	+19
1951	911,619	— 9
1952	879,233	— 5
1953	831,515	

Month	Sept. '53 Compared to Other Months '53 (000) Amt.	% Change
Jan. 1	$839,830	— 1
Feb.	844,459	— 2
Mar.	850,267	— 2
Apr.	853,467	— 3
May	845,452	— 2
June	836,822	— 1
July	833,256	——
Aug.	833,082	——
Sept.	831,515	

*Subject to revision.

†All total inventory figures taken from I.C.C. statement M-125 for the month indicated.

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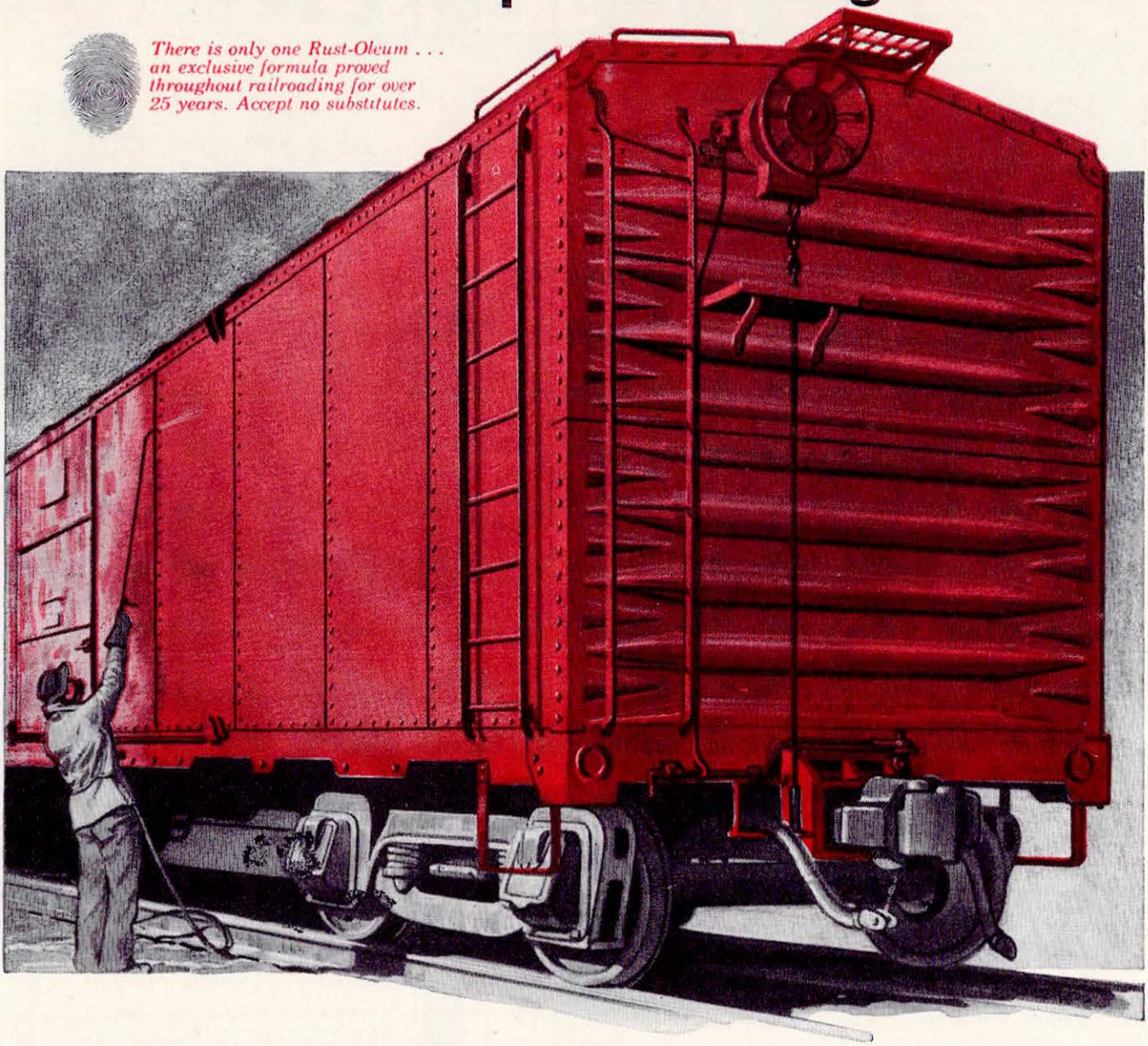

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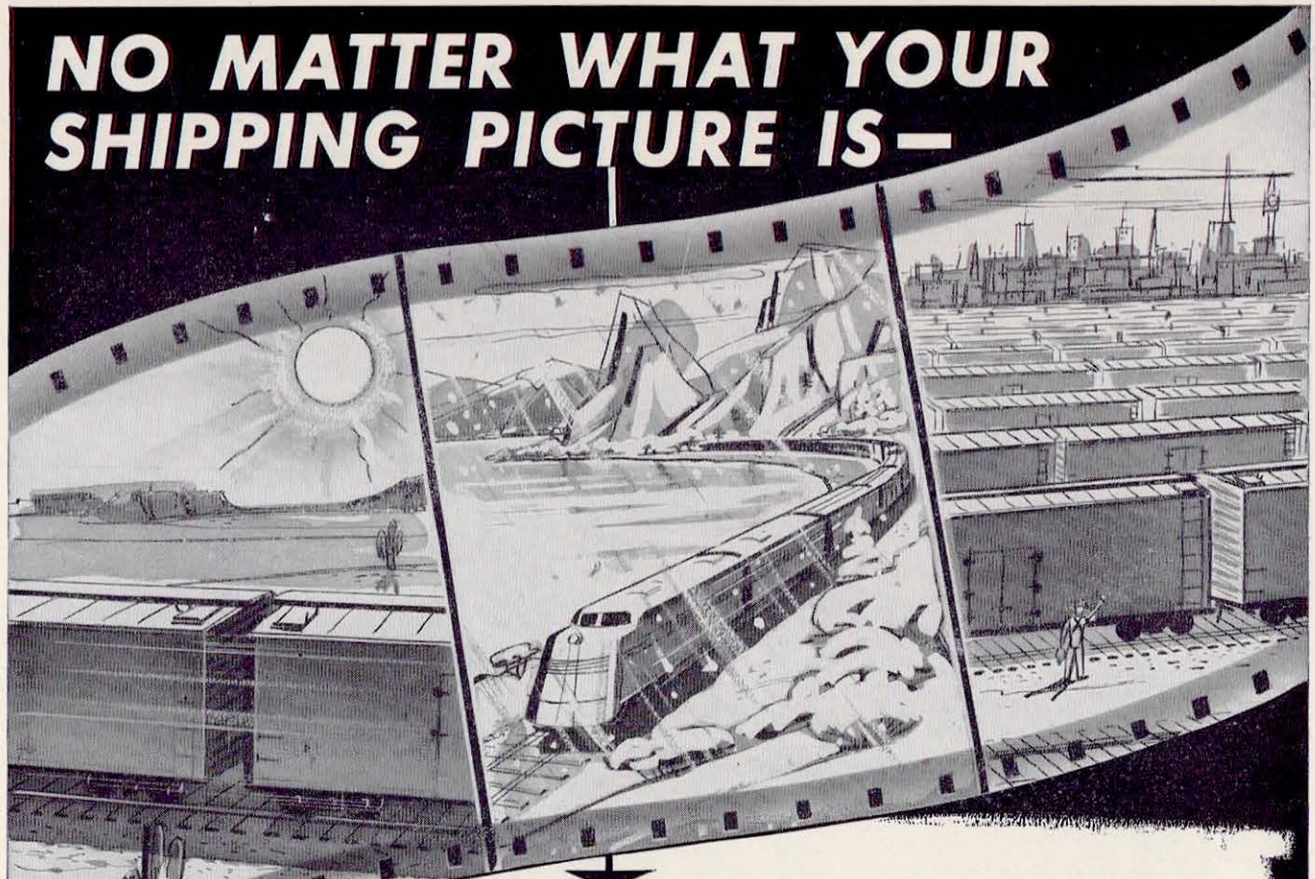

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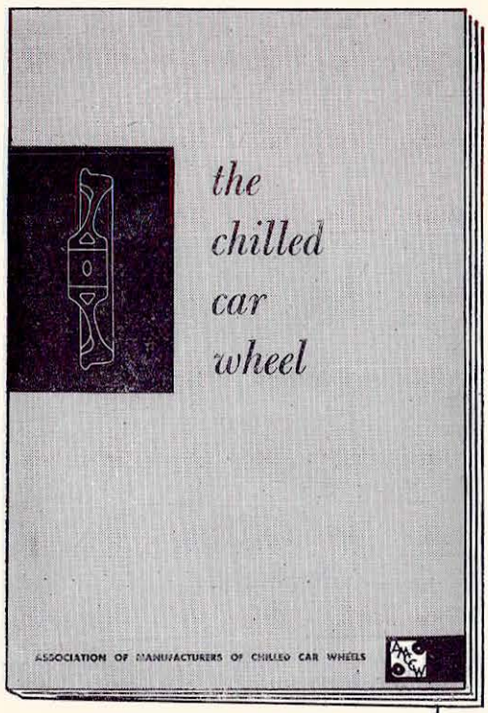

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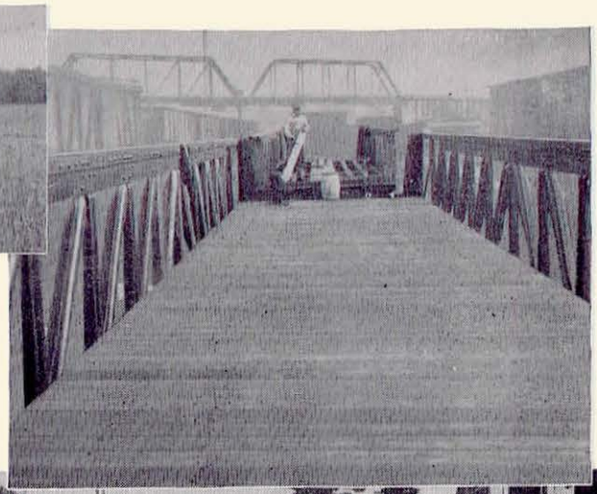

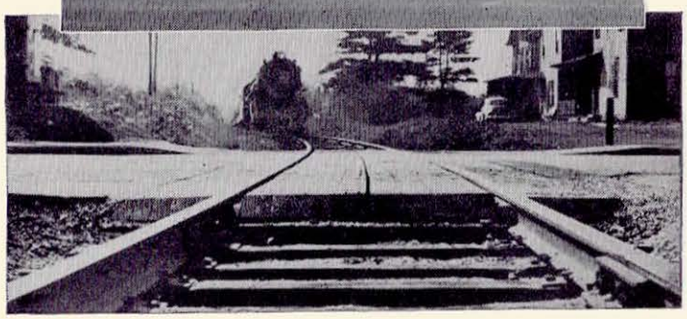

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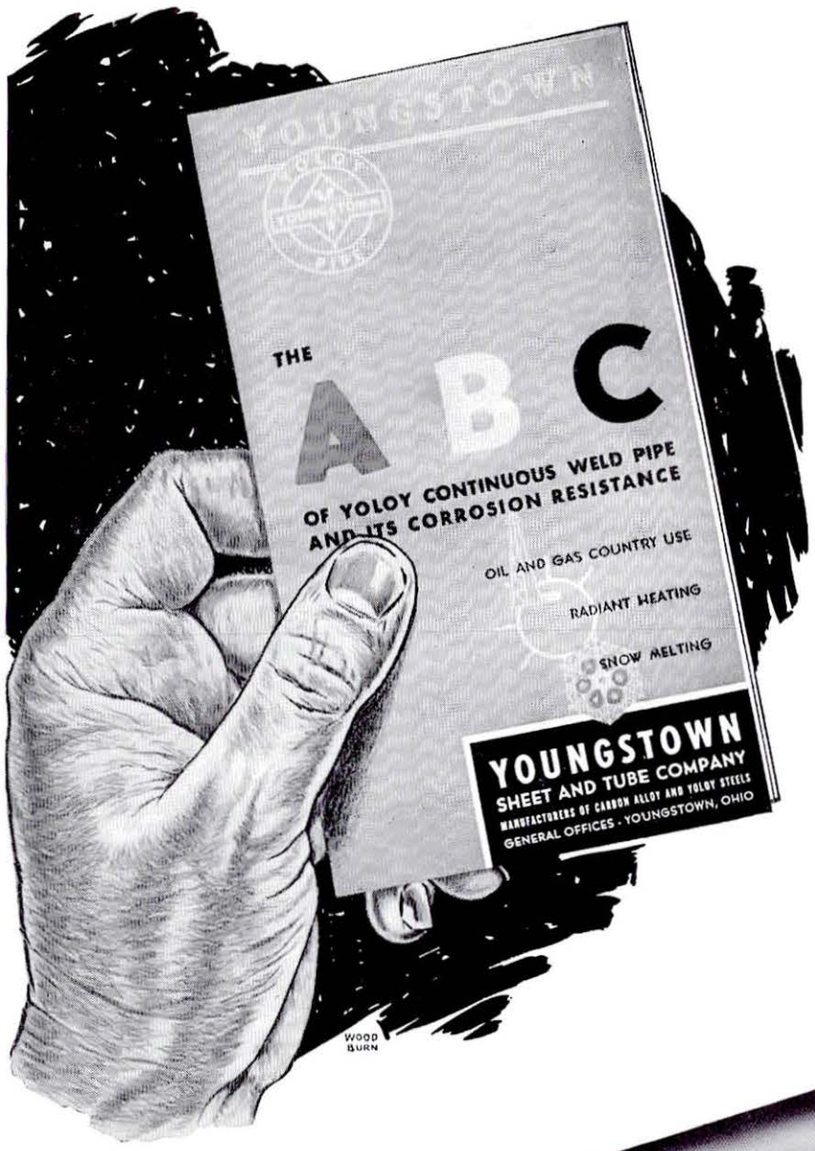

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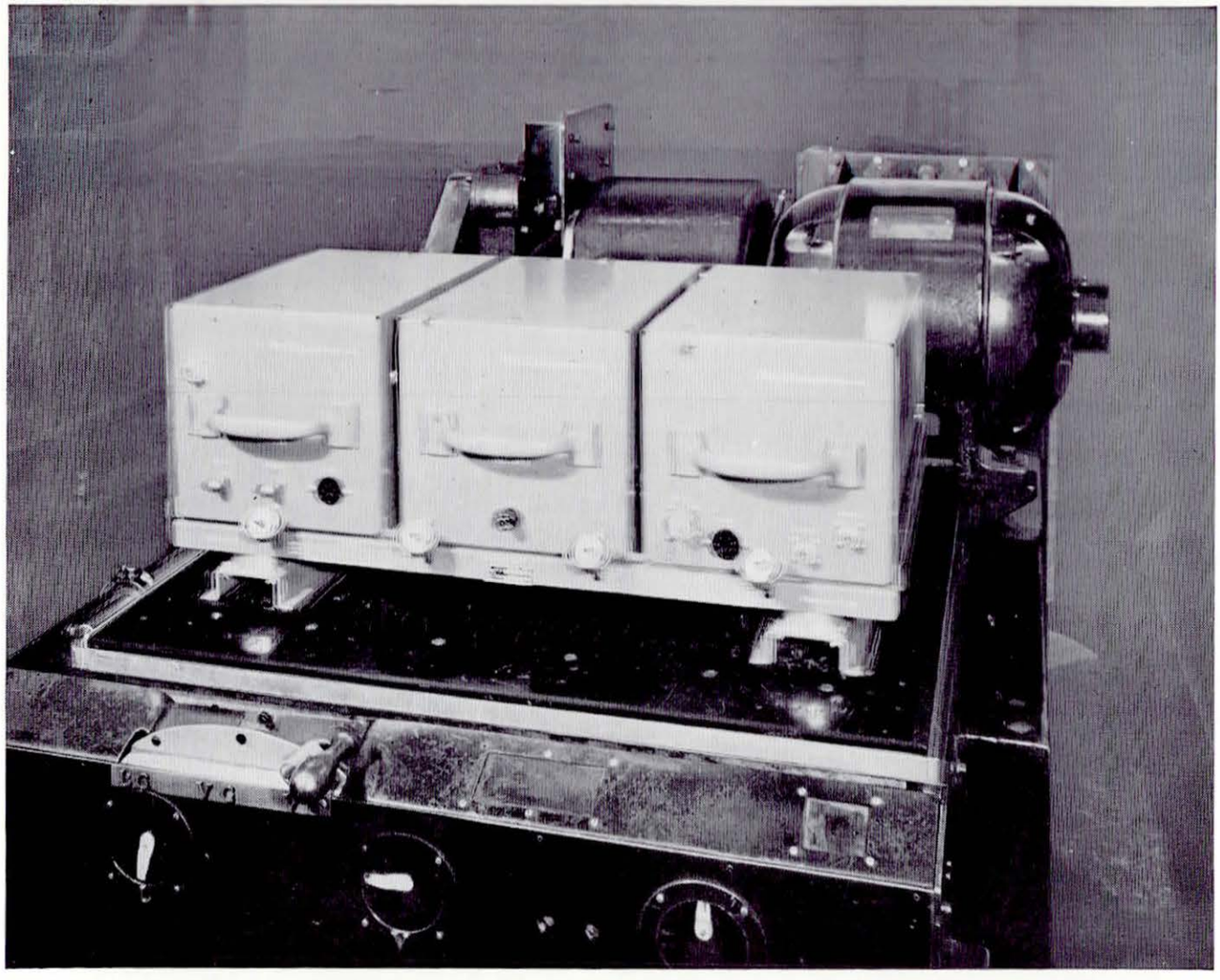

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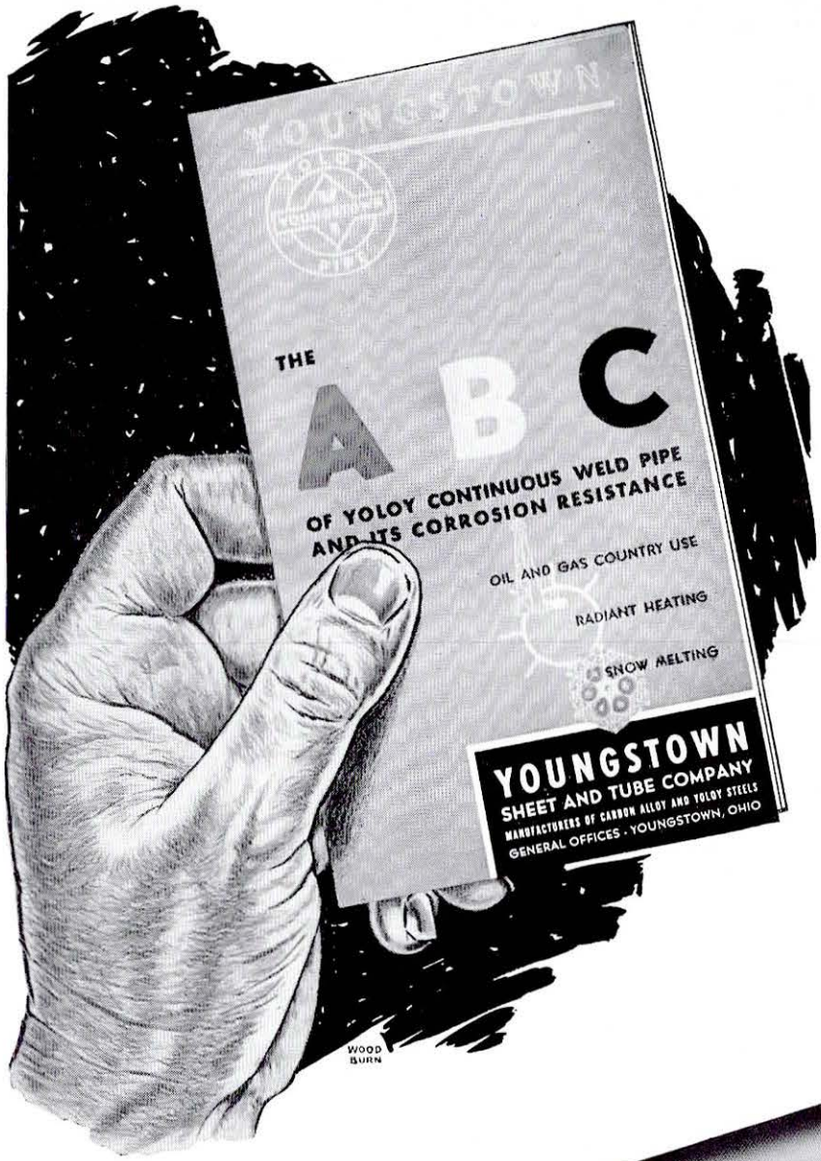

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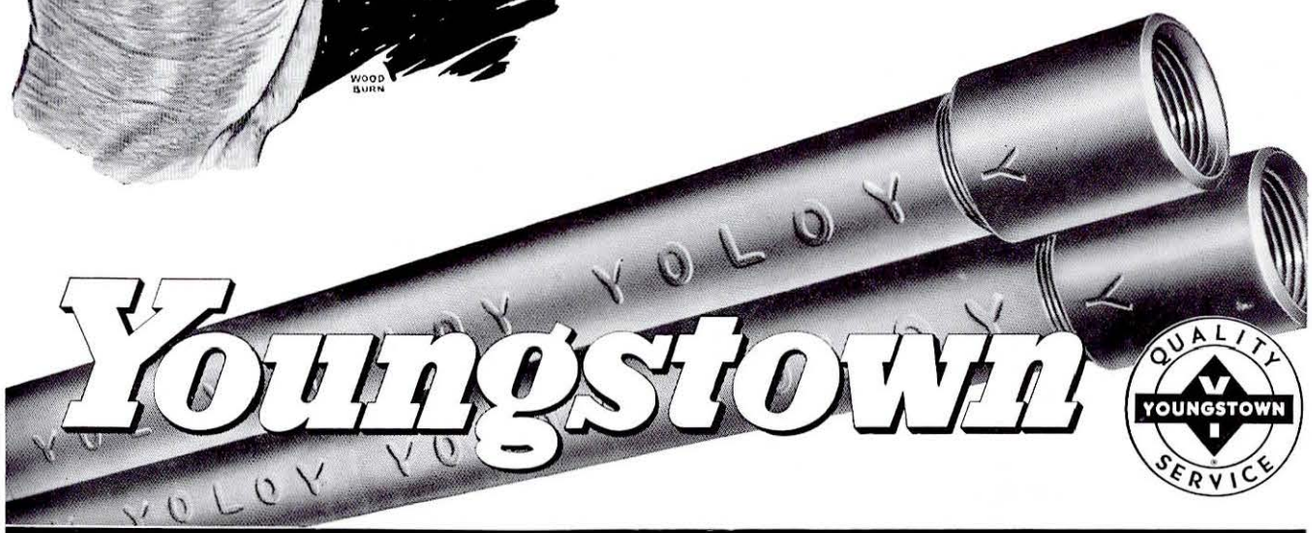

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Altitudes range from sea level to nearly six thousand feet.

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The run is 924 miles between Oakland and Salt Lake City.

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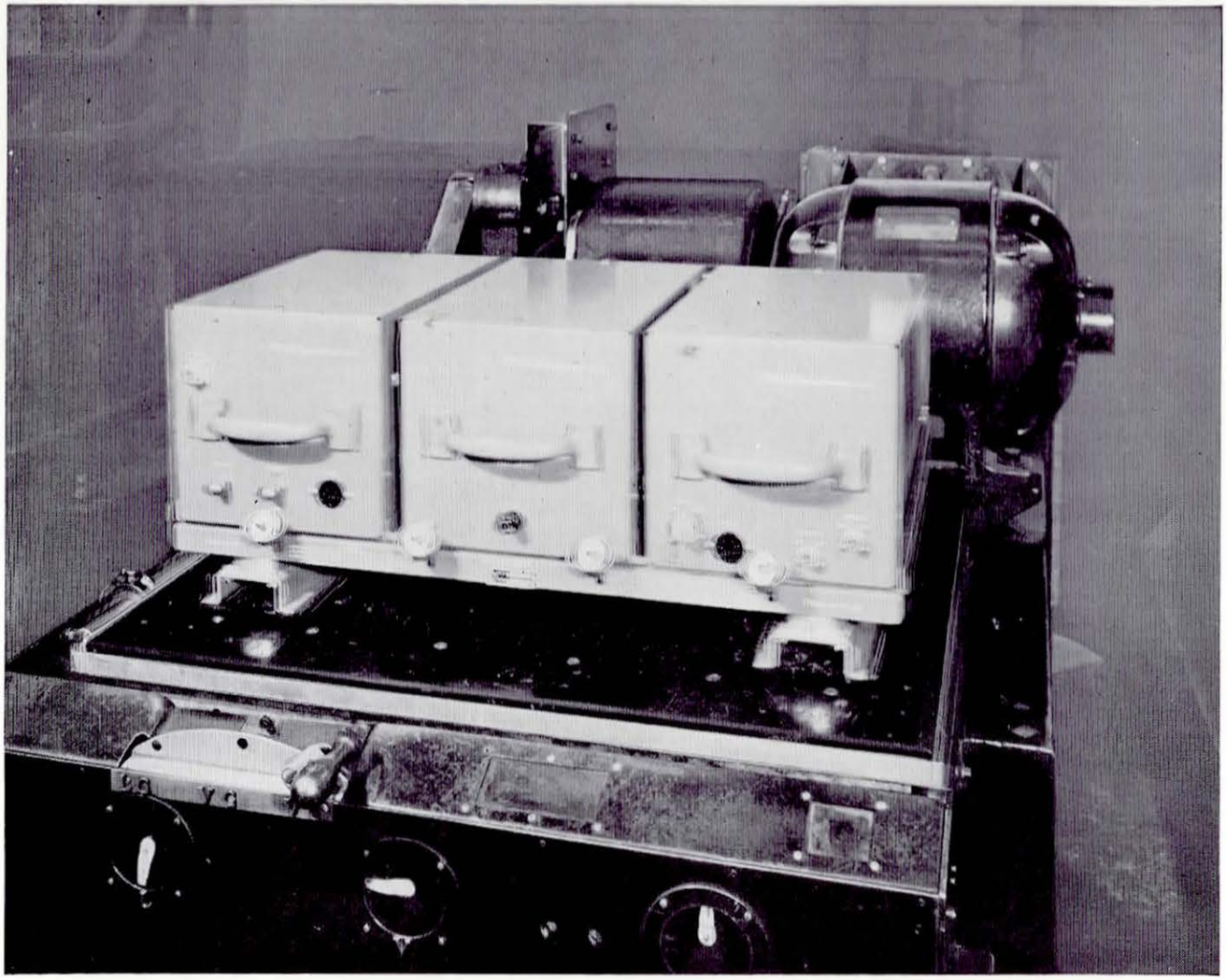

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To check railroad radio immunity to vibration from actual road operations, Westinghouse bolts Type FE equipment to a shaker table. While the radio is operating, the table is vibrated through a range of frequencies at amplitudes more severe than any encountered in actual operation.

During and after the tests, Type FE Railroad Radio experiences no difficulty. Receiver sensitivity and transmitter output are unimpaired . . . there is no hum or distortion . . . operation is unchanged. This sturdy, electrically sound railroad radio goes through test after test . . . each time emerges "proved for availability."

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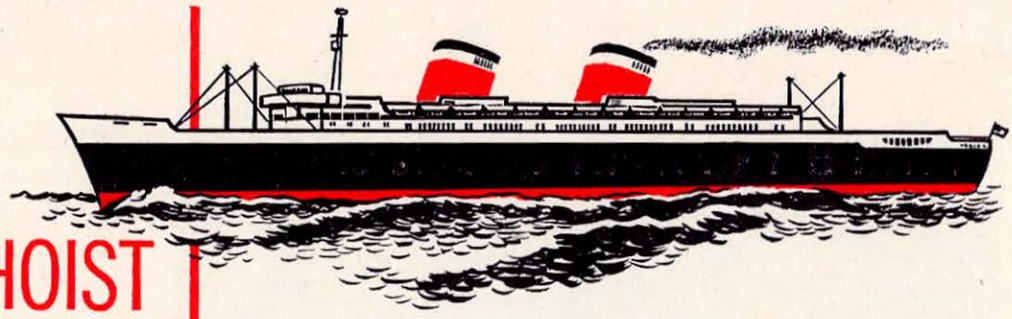

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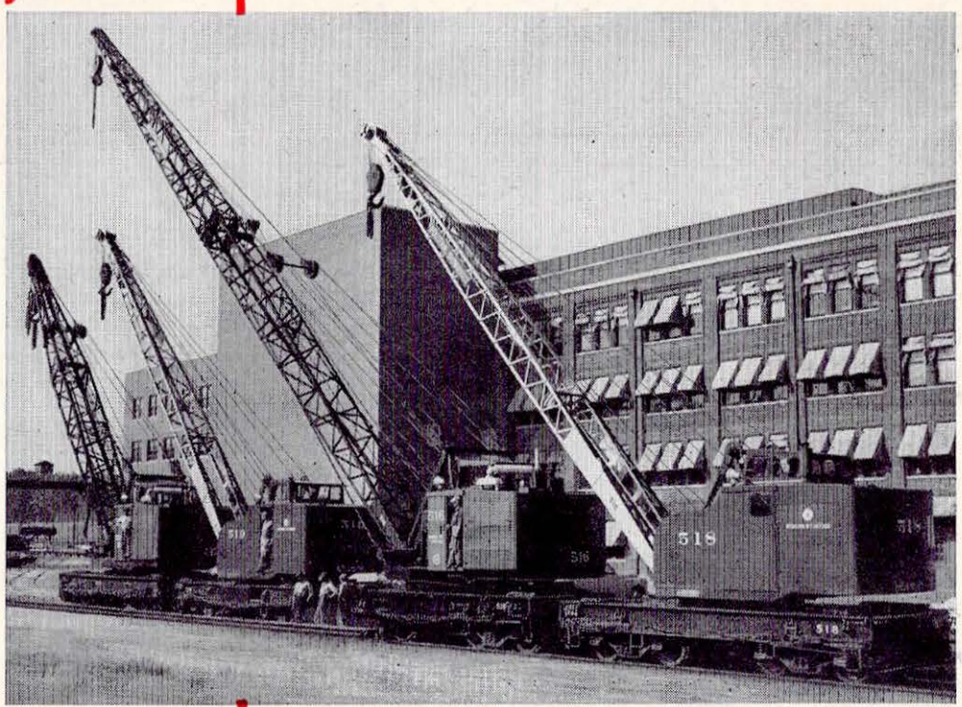
CRANES help build the S.S. United States and other big ships for Newport News Shipbuilding and Drydock Co.

One of the largest shipbuilding and ship repair yards in the world, Newport News Shipbuilding and Drydock Co., designed and built the huge luxury liner, S. S. United States. They also build, convert and repair naval and merchant vessels of all types. For the many difficult materials handling operations this work entails, they need efficient and dependable equipment. That's why this company maintains a fleet of modern Brownhoist Diesel Electric Locomotive-Cranes.

Brownhoist Cranes perform equally well as switch engines or cranes operating with magnet, hook or bucket. Monitor Type Cab and Clear-Vision Boom give the operator full 360° visibility. Rugged construction, simplified mechanism, and easy accessibility to all moving parts help keep maintenance and repair costs low. In railroads, steel mills, mines and large manufacturing plants, Brownhoist Cranes are saving production time and money. They are built in capacities from 25 to 80 tons for virtually every materials handling operation. For complete information, consult your nearest Brownhoist representative or write us today.



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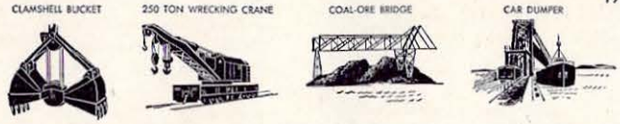
BROWNHOIST
builds better cranes



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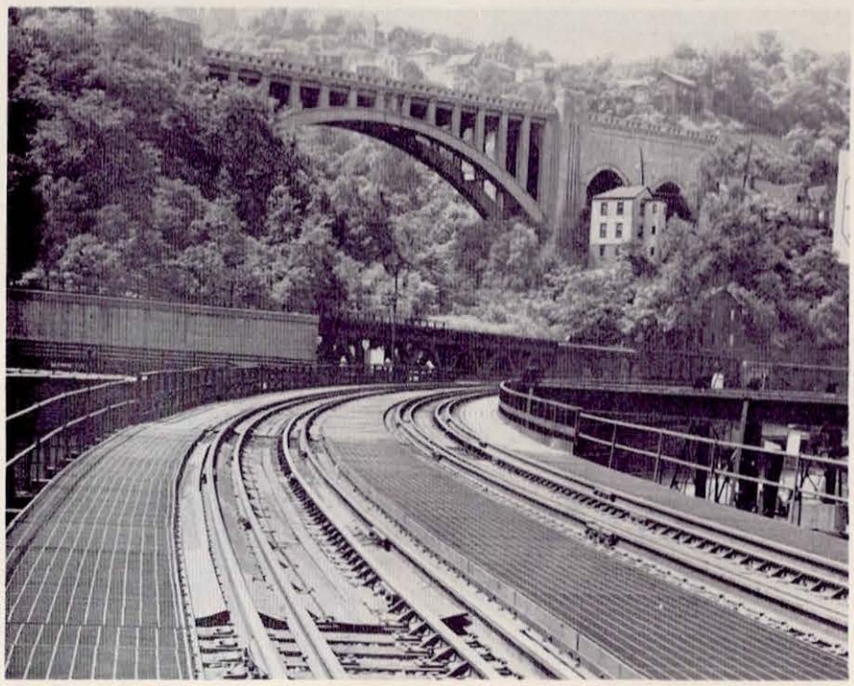
What's New in Products



Steel Grating for Bridge Walkways

A new railroad use is developed for a product which is already well known in the industry

Walkways on railroad bridges is a new application of electroforged steel grating developed by the Blaw-Knox Company, Pittsburgh. Such applications eliminate fire hazards and provide safe footing under all weather conditions. These gratings with slightly roughened surfaces are also being used for walkways on the tops of roofed cars, side running boards on tank cars, brake and locomotive steps, guards over diesel exhaust fans and as ramps for adjusting valves on diesel locomotives •

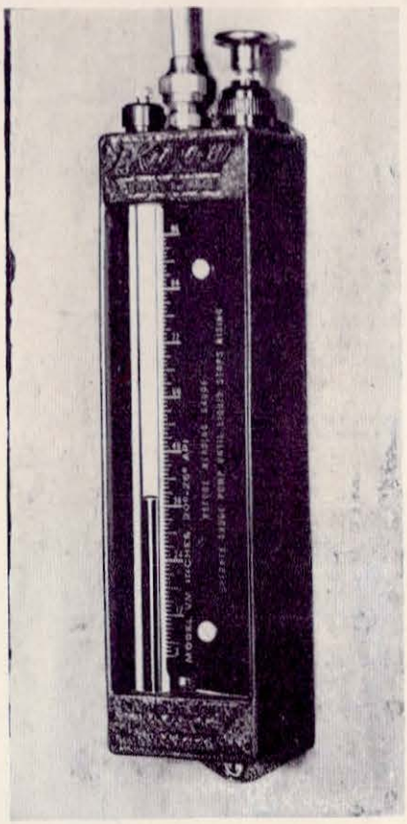
Magnesium Dock Board

A new magnesium dock board loading system, which the manufacturer says has been specifically designed for permanent installation on concrete docks, has been announced by Magline, Inc., Pinconning, Mich. The dock board units, called Perma-Docks, are believed to be the first of their kind to be manufactured of magnesium.

Perma-Docks can be raised or lowered by one man; no power operated devices or counterbalances are required. The recessed type of dock installation permits the dock board unit to self-adjust to truck level, and automatically compensates for truck spring deflection. The system is said to require no maintenance.

An additional feature is the new "Magliner" safety curb, designed to prevent power-truck wheels from colliding with the curb rail. According to the company, this eliminates the biggest single cause of power-truck tire damage encountered in handling operations.

Cost studies show, the company states, that the new magnesium Perma-Dock system saves approximately 65 per cent in initial installation costs •



Remote-Reading Tank Gage

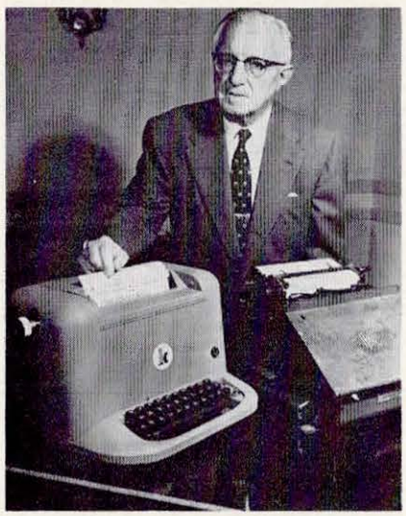
A remote-reading tank gage, for use with vented fuel oil, gasoline and diesel oil tanks to 9 ft. depth, has been announced by the King Engineering Corporation, P.O. Box 310, Ann Arbor, Mich.

This "Keco" gage shows the depth of fuel in inches, and is designed for use wherever quick gaging is desired without going near the tank. The manufacturer states that it can be located wherever most convenient—at any reasonable distance from the tank, and at any desired elevation.

The etched-aluminum scale plate has four different scales, to permit using the gage with fuels of a wide range of A.P.I. gravities. Only one scale is visible at any time. If the grade of fuel is changed, the scale plate is readily turned to bring the proper scale into reading position.

The gage works as a frictionless

hydrostatic balance, and has no moving mechanical parts except a small air pump built into the case, which is of molded nylon. All parts in the tank are steel, not affected by sulphur or other chemicals in the fuel. Installation consists only of mounting a ½-in. pipe in the tank, placing the gage on a wall or column, and connecting a ¼-in. copper tube from tank to gage •



EDWARD E. KLEINSCHMIDT shows his newest product, a high-speed, modern design teleprinter now available for railroad use, and one of his earliest inventions, a page printer he developed in 1914.

New Fast Teleprinter

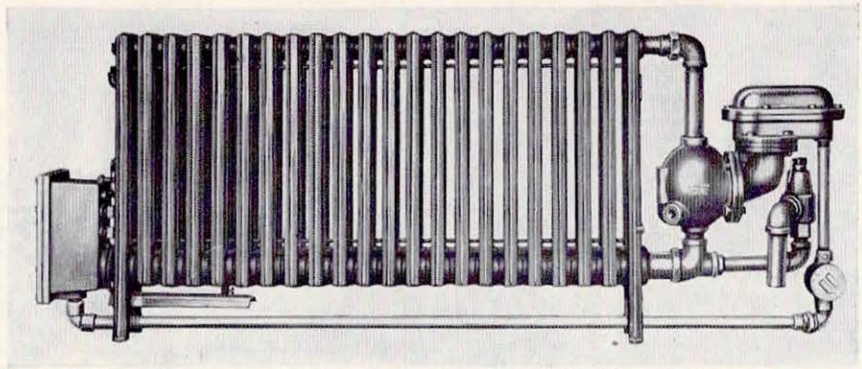
A new lightweight, high-speed telegraph printing machine has been placed on the market by Kleinschmidt, Inc., Deerfield, Ill.

This new teleprinter, previously restricted to the Armed Forces, is designed to send and receive messages at the rate of 100 words per minute, and is actually capable of speeds of up to 150 words per minute, which is said to be about two and one-half times faster than conventional machines now used.

This new Kleinschmidt page printer, when receiving from a previously prepared perforated tape, is reported to be capable of hitting a top speed of 15 characters per second.

The teleprinter weighs only 45 lb., about one-third the weight of many of those now in use, and is said to contain about 30 per cent fewer parts.

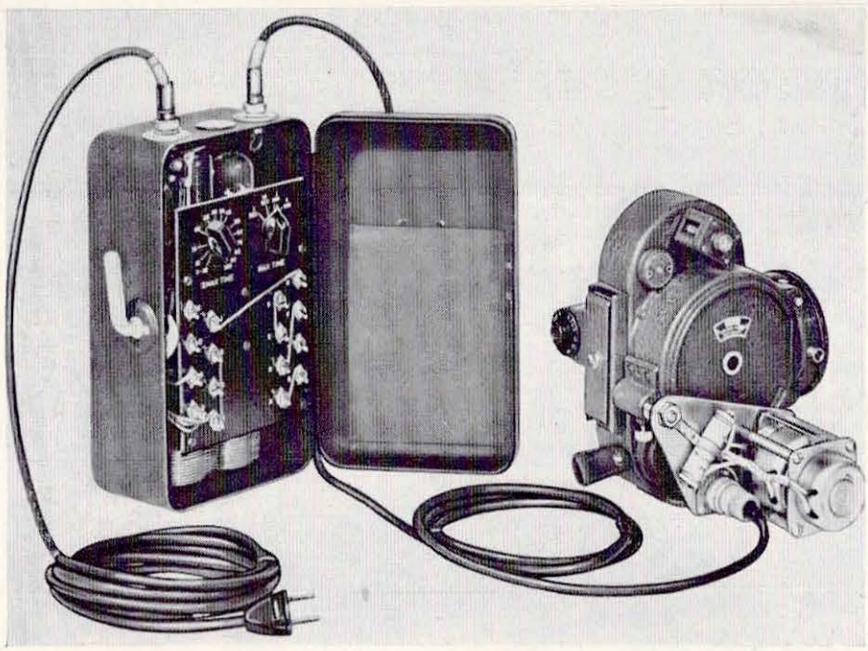
This revolutionary page printer, and a new tape transmitter also being offered by Kleinschmidt, are the features of a system of rapid printed communication which this company offers for railroad and commercial purposes •



Explosion-Proof Electric Radiator

A self-contained electric radiator that is explosion-proof has been announced by Burnham Corporation, Irvington, N.Y., for use at hazardous locations. These radiators have the approval of Underwriters' Laboratories for Class 1—Group D atmospheres and Class 2—Group F and G atmospheres. These atmospheres will be found in railroad paint shops, oil pump and storage houses, and grain elevators, since they cover those containing gasoline, naphtha, petrol, butane, propane, alcohol, acetone, benzol, lacquer solvent vapors and natural gas, as well as carbon black, coal, coke, flour, starch and grain dusts.

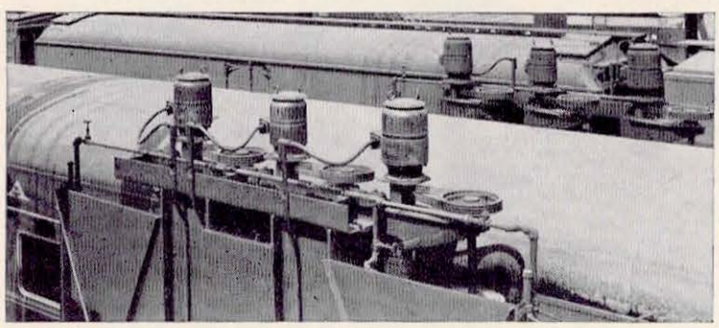
Each radiator is equipped with a dual-actuated thermostat, which controls internal pressure and room temperature, and is sealed in a cast-iron explosion-proof housing. It also has a float-operated switch which acts automatically to shut off the current in case the water level drops below the float level. As a final measure of protection, it is provided with a mechanical relief valve which will open automatically and relieve internal pressure if the pressure should reach 30 psi. •



Motion Picture Time Lapse Adaptor

Time lapse photography — wherein action of hours or days may be condensed into minutes on a motion picture screen—has proved to be a valuable research aid in many fields. The Photovision Company, 1636 Washington ave., Wilmette, Ill., has announced equipment to adapt Bell & Howell 16-mm. "Filmo" and 35-mm. "Eyemo" cameras for this type of work. The Photovision unit provides automatic pictures cycling within a range of two pictures per second to one picture every four minutes without modification to the camera other than addition of a mounting bracket. The camera is actuated by a solenoid unit (shown affixed to camera) that does not require power from the camera spring nor an auxiliary motor. The company reports the independent drive system enables even exposure from frame to frame. The electronic "intervalimeter" (shown at the left) allows a wide choice of cycling intervals. It operates from any 110-volt 60-cycle a.c. current supply •

How G-E motors and control are helping railroads speed yard and shop service



G-E 2-hp and 3-hp induction motors driving this Whiting car washer have run 112 hours a week for 8 years, giving dependable service.

Two hundred cars a day pass through the Whiting car washer in the Pennsylvania Railroad's Pittsburgh yard. The washer is equipped with G-E fan-cooled induction motors, which run 16 hours a day, 7 days a week. Yet, a once-a-year lubrication inspection is the only maintenance required.

General Electric motors and control can add dependability and savings to your shop, yard, and terminal operations. Ask your G-E apparatus sales representative to help you select the proper G-E motors and control to meet your requirements. General Electric Company, Schenectady 5, N. Y. 152-52

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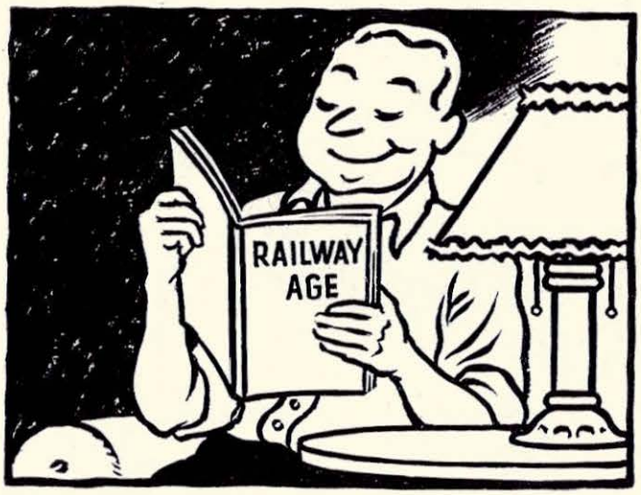

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Benchmarks and Yardsticks

MOST RAILROAD MEN, as solid citizens, have "outside" interests which serve to relate, not only them but their companies too, with their local communities. Of such community interests none is, perhaps, more general than that in schools. Such interest is timely, too, because the schools have an acute problem—arising from the rapid increases in school population, and the shortage (actual or imminent) of facilities and teachers.

This situation is one of those highly complex problems which can, too easily, be made to appear simple, i.e., just a matter of appropriating more and more money, and letting the school authorities take care of the rest. Your reporter ventures the suggestion—possibly, at some risk—that much besides just a lot more money is needed. For example, a lot of extra critical intelligence, attention and goodwill—not only on the part of the school authorities, but by citizens generally.

There are some people who appear to equate good schools with modern—even luxurious—school buildings. Buildings are necessary, but they are certainly not as important as good teachers. And good teachers aren't necessarily obtained just by paying higher salaries—unless the higher salaries go to the people that deserve them. Moreover, it isn't just inadequate salaries which tend to make teaching a less attractive profession to able people than it ought to be. Social standing and "acceptance" have a lot to do with the attractiveness of a job.

How many otherwise sound citizens are there, for instance, who tend to consider teachers as a class as "mere" teachers? What is "mere" about having in charge the intellectual equipment (and a large part of the character training) of the next generation of Americans?

From his own observation, your reporter would suggest—again with great diffidence—that what the schools need more than anything else (more even than a lot more money) is sympathetic attention from all citizens; and, especially, an effort to see that good teachers are adequately rewarded—not only financially, but by being accorded recognition in the community for the important people they are. And when citizens go out to search for the good teachers to reward them, they may also discover a few that are not so good—and that information could be useful too.

Not all the good schools are publicly operated—a small ratio, but an important group, is comprised of private and church schools; and these institutions and their teaching staffs merit the same sympathetic attention as the public schools. There are some people who, apparently, believe that strengthening the non-public schools is, *per se,* an act of unfriendliness to the public school system—which certainly ought not to be true, and probably usually isn't. J.G.L.

when the heat is on...

specify Okonite-Okoprene Diesel wiring

When Diesel locomotives burn up the mileage, there's always danger of burning up the wiring, too. High temperatures generated by a Diesel are rough on conventional types of wiring — that's why so many builders now specify Okonite-Okoprene Diesel Locomotive Wiring.

Okonite-Okoprene meets the flame test requirements of the Underwriters' Laboratories. To pass these tests a cable must not support combustion or communicate flame along the cables. In contrast to ordinary saturated fibrous coverings, Okonite's time-proved Okoprene sheath provides a barrier against continuous high temperature.

This tough Okoprene sheath withstands the other saboteurs of Diesel wiring, too. It is moisture resistant and mechanically tough, safeguarding the insulation against abrasion and other types of possible damage. Okoprene is particularly resistant to petroleum products in general use on Diesels, thus preventing swelling and softening of the insulation.

Okonite-Okoprene Diesel wiring is insulated with Okonite insulation — the same long-lived mineral-base rubber insulation that has been used so successfully for important electrical circuits by three generations of railroad men.

Bulletin RA-2078A gives full details of Okonite-Okoprene Type DEL Diesel Locomotive Wiring, for both conduit and exposed installations. Ask your Okonite representative, or write for your copy of this bulletin to: The Okonite Company, Passaic, N. J.

The best cable is your best policy

OKONITE SINCE 1878 *insulated wires and cables*

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Regulation Is a Lot Like Prohibition

The arguments against giving the railroads greater regulatory freedom (e.g., in adjusting rates to conform with inflationary increases in costs) sound a good deal like the arguments the "drys" used against the repeal of National Prohibition. For example, the defenders of rigid and leisurely regulation of rates do not argue the virtues of governmental interference with private business—instead what they talk about is the desirability of keeping costs down; of combating inflation. In the same way, the "drys" never sounded off in praise of prohibition's spies and informers—their "sales talk" all had to do with the advantage of sobriety as against drunkenness. Thus, they endeavored to portray the enemies of prohibition as inebriates and irresponsibles; and their strategy succeeded for a time.

The railroads need greater freedom in making rates (as well as a retention of their recently threatened right to make their own operating rules)—not because they intend to violate the laws of economics in their pricing (or to standardize upon unsafe operating practices), but simply because they want to be able to make day-to-day decisions appropriate to circumstances which confront them at the time. The Prohibitionists assumed that the typical American did not have sense or self-control enough to be temperate in his intake of alcoholic beverages; and they made the further erroneous assumption that a wise decision in favor of temperance would be fostered by putting a detective on every citizen's trail.

The defenders of rigid regulation of railroads appear to believe that the railroads would raise their rates to the sky if they were given the legal right to do so—an assumption which parallels that of the Prohibitionists that practically nobody would stay sober if there were any alcoholic beverages legally obtainable.

Uneconomic conduct by the railroads is reprehensible, just as lack of sobriety on the part of the citizenry is reprehensible. But from these observations it does not follow that bureaucratic restraints are needed, either to keep the citizens reasonably sober or the railroads respectful of the laws of economics. The fact is that, under competition, flouting economic law carries its own punishment, just as does overindulgence in intoxicants—and these "built-in" restraints are far more effective in promoting economic behavior and temperance than the most efficient system of governmental control could be.

Indeed, excessive governmental meddling in business and private behavior usually has an effect which is precisely opposite to the one intended. Thus, prohibition promoted the consumption of intoxicants by making excessive imbibing socially tolerable—and by putting a premium on high-powered beverages. Similarly, the rigid and leisurely regulation of railroad rates has undeniably fostered anti-economic pricing practices.

Another Comparison

This point can be conclusively proved by comparing the rate-making practices of the regulated railroads with the pricing practices of the free mail-order houses. As Fairman Dick has observed, no postwar catalog of any of the big mail-order houses has shown prices of all articles increased by a flat percentage "across the board." Instead, while average prices have gone up, some prices of specific articles have remained constant; some have declined; some have been increased more than the average and others less than the average. Each price of each article has, in other words, responded to the forces of supply and demand of the free market.

Contrast this with railroad pricing. In the first place, since so much time is needed to get action from the cumbersome regulatory machinery, the average price increases the railroads have had to seek have been greater than would have been necessary if transportation price regulation had been left to the free market. Secondly, because every purchaser of transportation has the right—under the highly artificial circumstance of regulation—to object to price increases, it is practically impossible for the railroads to "get anywhere" with needed rate increases unless they ask for a flat percentage rise "across the board." This practice has had the undeniable effect of increasing some rates to an uneconomic degree, while other rates are left uneconomically low.

Unregulated industries are not immune to mistakes in their pricing, but these mistakes carry their own punishment and, hence, are quickly corrected. Take, for instance, the gasoline business—in which, every now and then a "price war" breaks out. For a few days, motorists are able to purchase gasoline at prices far below the cost of manufacture—but the intercompany warfare is too expensive to continue long, and prices soon return to a level high enough to keep all necessary

and efficient companies in continuing production. Does anyone suppose that gasoline supply would be more efficient or more satisfactory to the consuming public, if rigid governmental regulation of pricing were substituted for the present free competitive market?

There can be no doubt that monopoly needs regulation in its pricing—for the simple reason that, for a monopoly, there is no "built-in" retribution for uneconomic behavior. A monopoly is free, unless regulated, to add the cost of its errors to the price of its product—but the competitive enterprise which seeks to emulate such behavior soon finds it impossible to do so and continue in business.

The railroads now have, in their competitors, a "built-in" system of regulation, making anachronistic the elaborate, rigid and detailed system of federal regulation to which they are still subjected. This regulation, as practiced to date, has served largely to prevent, rather than assist, the natural regulation of the free market to exert its healthy influence on transportation pricing. This is unfortunate, because it is still quite possible that some regulation of transportation pricing *might* be better than no regulation at all—but that *might* hangs on the wisdom of the regulators and the regulatory law. That is, are the regulators and the regulatory law going to work *with* the economic forces of the free market, or are they going to keep on trying to thwart these health-giving forces?

It is still an untested possibility that some degree of prohibition of alcoholic beverages might have "worked better" for the people and the country than either complete freedom from governmental restraint or "bone-dry" prohibition. But the defenders of prohibition were die-hards. They would brook no compromise (e.g., on wine and beer, which at one stage of the debate would probably have deprived the "wets" of practically all their momentum).

It is quite likely that both the defenders and opponents of rigid regulation of railroads could profitably consider the close parallelism which exists between their controversy and that over prohibition; and take to heart the successes and failures which came in the prohibition controversy.

Getting down to immediate cases—the debate on "time-lag" legislation certainly ought not to hinge on the question of whether or not railroad rates should go up or down, but solely on the issue of how much bureaucratic sand the public interest can still tolerate in the machinery of the free market.

THE UNFILLED PRESCRIPTION

"Conditions have completely changed. With the advent of automotive, air and water transportation, the railroads were confronted with competition for practically every passenger and pound of freight they carried. The 'honeymoon monopoly' was over in so far as the railroad industry was concerned. The original concept of the Interstate Commerce Act was primarily for the purpose of protecting the public interest under conditions then existing. Because of the change in conditions, without adequate changes in regulation, we now find the procedures and administration of the Interstate Commerce Act in the process of actually retarding the industry, and at the same time not protecting the public interest. To retard an industry that is in position to provide mass transportation, of people and goods, at a lower full cost than any other transportation agency can ever hope to attain, is certainly not in the public interest . . .

"This tremendous railroad plant is one of the greatest natural resources of the country today, because it is equipped to do what I have said—provide lower full cost mass transportation than any other agency. But it can be destroyed through lack of use brought about by an unfair set of rules under which it is required by law to operate—and destruction could become a reality largely because we are not carrying out the transportation policy so clearly defined by Congress in 1940. . .

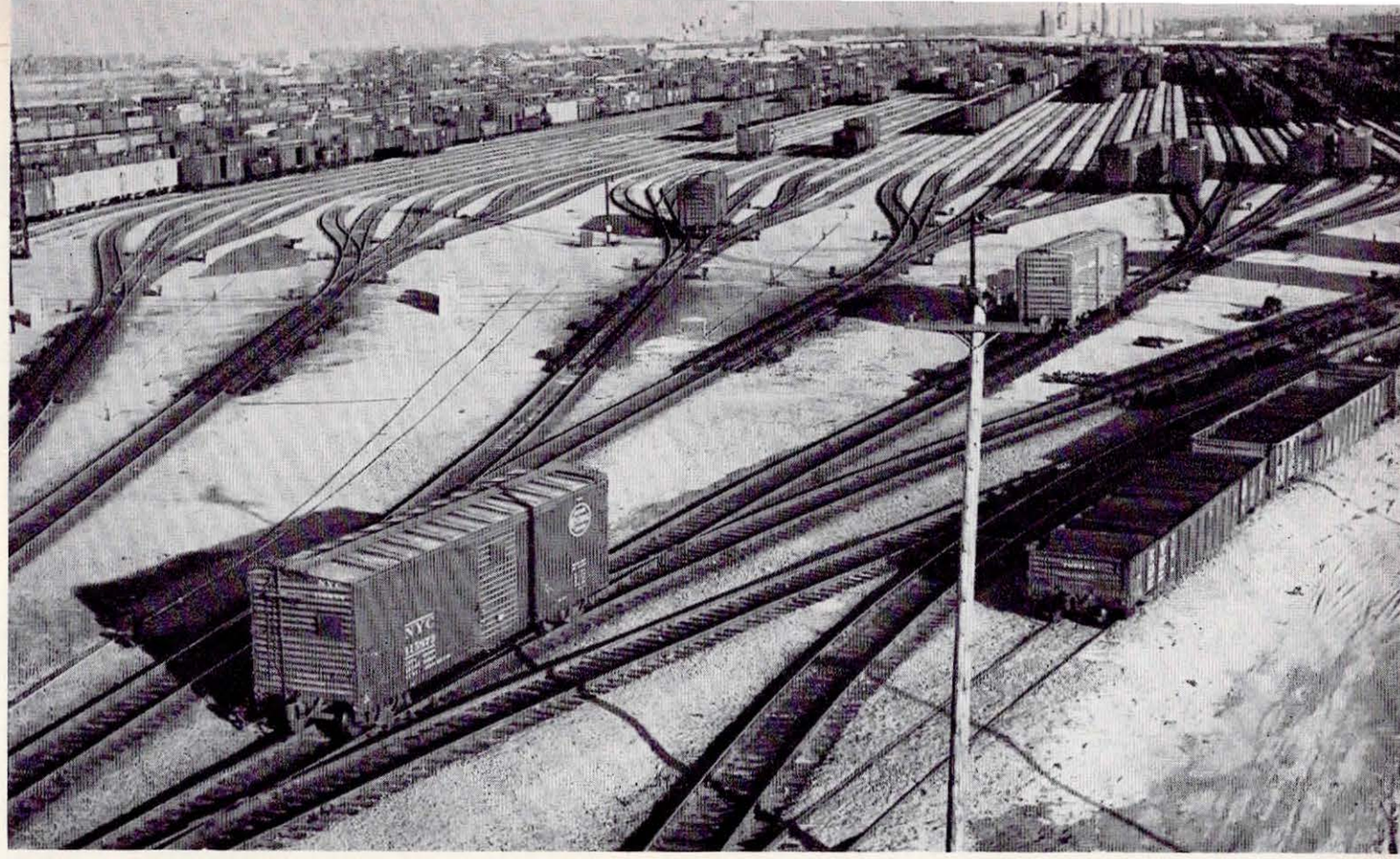
"There was never more constructive thinking expressed in fewer words than in that declaration of policy. But what good is a declaration of policy if it is forgotten as soon as it is written!

"In that declaration of policy, Congress wrote a prescription that was designed to cure the ills and restore the health of the nation's vital transportation services. The trouble is that the prescription has never been taken to the drug store to be filled. Old and misfit laws are still used in so far as transportation is concerned. The new and modern laws which are needed to carry out the good intentions of Congress remain in the talking stage.

"This all leads up to the answer to the No. 1 problem of the railroad industry today—fair and equal treatment for all forms of competitive transport, with favors to none. This means enforcement of the declaration of policy so eloquently enunciated by the Congress of the United States 13 years ago.

"The No. 2 problem—or rather the answer to that problem—is to provide amendments to the Interstate Commerce Act so that it can be administered in conformity with present day competitive conditions—instead of the outmoded way in which it is being done. . . .

"I could go on for a long time citing the deficiencies of regulation in fostering and developing a sound national transportation system for our great country, but essentially all that is needed is enforcement of the declared national transportation policy of the Congress of the United States. This can only be accomplished by specific legislative action—and that means public understanding and support in order to obtain the political considerations involved. . . ."
—From an address by J. M. Symes, executive vice-president, Pennsylvania, at a meeting of the Transportation Association of America in Pittsburgh, December 2.

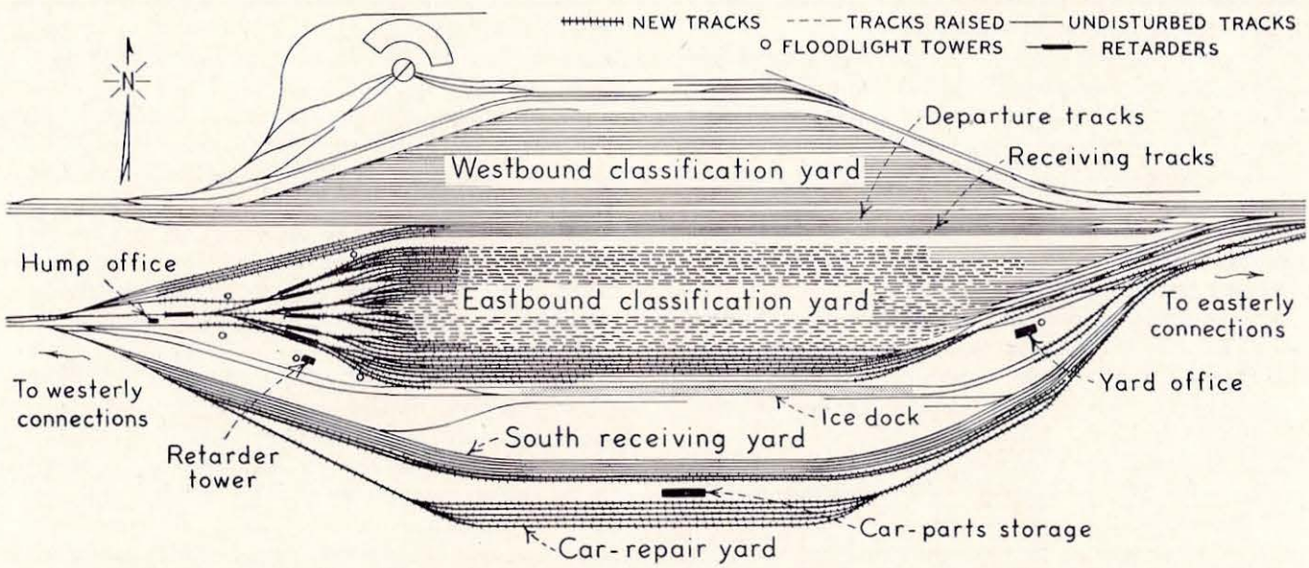


THE 39 CLASSIFICATION TRACKS were formed into six track groupings, each served by a three-unit final retarder.

More Tracks for More Traffic

. . . IN IHB BLUE ISLAND RETARDER YARD

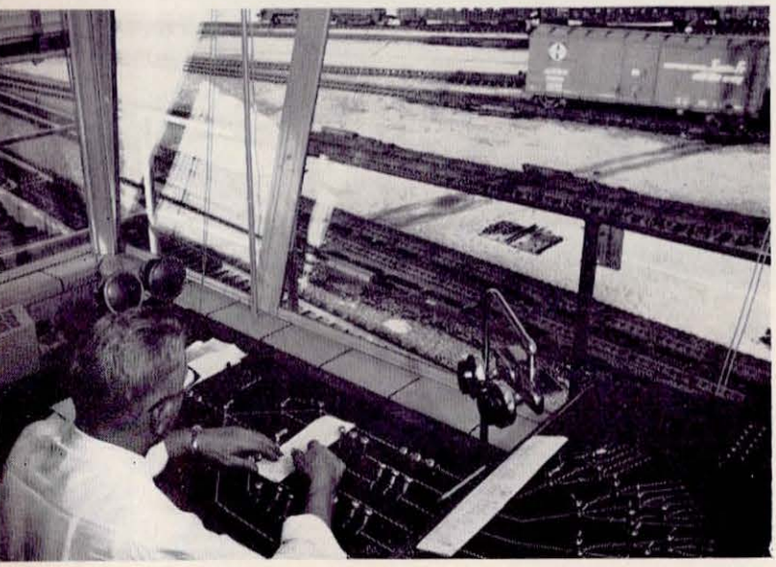
Increased efficiency and greater capacity result from the construction of new tracks, lengthening of old tracks, and rearrangement of car-retarder and switch-control systems



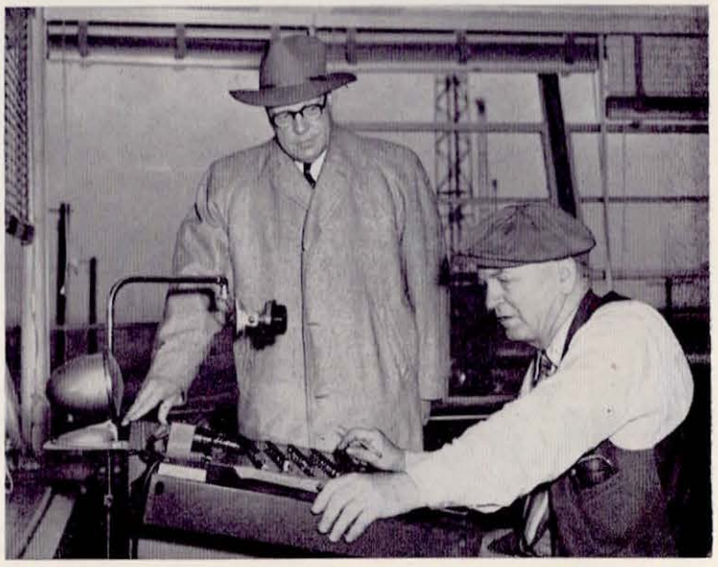
IHB's EASTBOUND CLASSIFICATION YARD, one of the earliest retarder yards ever built, was modernized at a cost of $3.5 million. The seven retarder installations now in service replace the former 43 installations.

SWITCHER PAUSES AT CREST after pushing a cut of cars over the hump at IHB's Blue Island yard.

ANOTHER CUT OF CARS is being pushed up the hump lead from the west for classification into eastbound trains.



E. A. KORDEWICK, retarder operator, has six retarders directly in front of him as he manipulates levers of control machine.



W. F. DAVIS, IHB general manager, watches W. H. Miller, switch machine operator in the hump tower, set the routes for a cut of cars.

The Indiana Harbor Belt has just about completed a $3.5-million project for improving the switching layout and operations of its retarder-classification yard, known as Blue Island yard, at Riverdale, Ill.

The improvements are quite extensive and include raising the existing hump; reduction of grades and lengthening of existing classification tracks; rearrangement of the car-retarder and switch-control systems; removal of the car-repair facilities and their replacement with new enlarged facilities at a more southerly location*; construction of a new hump office, a new yard office and a retarder-control tower; and improvement of drainage and sanitary sewer systems.

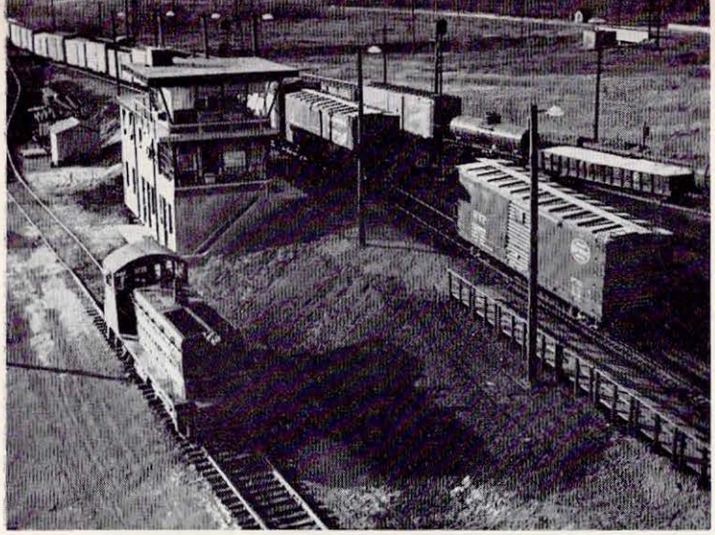
The project was necessary to speed up the dispatch of trains and to handle an increased volume of traffic for eastern deliveries from western connections. Another yard, adjacent northerly (see plan), handles the westbound traffic with flat switching.

The eastbound yard formerly had a capacity of 2,800 cars, but the improvements have increased this capacity to 3,800 cars, representing an increase of about 35 per cent. This increase was accomplished by constructing seven new classification tracks along the south side of the yard, lengthening the 32 existing classification tracks, and introduction of No. 8 turnouts and lap switches to replace existing turnouts. Space for the seven new tracks was secured by removal of the existing car repair facilities. Two additional tracks also were built in the south receiving yard.

The 32 tracks of the old retarder-classification yard were served by 43 retarder installations, each 38.5 ft. long. Two such units were used together for the master retarder installation on the hump and five units were single-rail installations. The retarders and switches were both controlled from four towers. The grade of the tracks in the body of the yard in general was 0.25 per cent, but the several track groupings were not on a level plane.

Plans for the proposed yard layout called for 39 classification tracks, divided into six track groupings but served by only seven retarder installations—one for each track group and one on the hump. The installation on the hump includes two 38.5-ft. retarder units while those on each track group include three such units. The plans also called for the new retarder installations to be controlled from a single tower and the switches from a new hump building. Also, it was proposed to

*See "This Rip Track Cuts Delays," in the August 24 *Railway Age*, page 71.



NEW HUMP OFFICE building was constructed at crest of grade which was raised 2.5 ft. above old yard crest.

THE NEW RETARDER TOWER houses the controls for all of the retarders. In the former layout, four control towers were used.

change the grade of the body of the yard to 0.20 per cent, with the six track groups on a level plane.

Work Carefully Planned

When altering a yard as busy as the one at Blue Island, the taking of any classification track out of service, even temporarily, seriously disturbs and slows down switching operations. So the IHB worked out a work procedure whereby the operating department always had as many or more tracks in service as were provided by the existing yard.

Much eastbound business handled at this yard consists of cars of perishables. It was the practice of the IHB to have the perishables placed at the head ends of all inbound trains so that, when the trains arrived in the receiving yard, these cars could be cut off immediately and taken to one of the two icing tracks along the southerly side of the yard. Meanwhile cars of dead freight were pulled back for classification over the hump. Immediately after icing the perishables were taken to the hump where they were classified. This practice had worked well and the road decided to continue this mode of operation.

Some preliminary work was required for this project before the track work could be carried out. This included building the new car-repair facilities and service tracks at a different location, removal of the old car-repair facilities, installation of three transverse drainage lines across the yard and connecting lines, installation of a sanitary sewer line to serve new buildings, and construction of a pumphouse having dual pumps to discharge the sewage to city mains.

New Buildings

The new buildings include a switch-control tower and yard office at the crest of the hump, a building which houses the retarder-control tower and a signal-maintainer's shop and other facilities for the signal department forces, and a yard office near the east end of the yard. Construction of the new buildings was coordinated with the track work so they would be ready when needed.

For carrying out the track changes in the classification yard the work of developing the six new track groups fell naturally into six work stages, with each stage scheduled to be completed in a month. The plan called first for the construction of group No. 6 (southerly group), as these were new tracks which could be constructed without interfering with humping operations. When these tracks had been completed, the tracks of group No. 5 were to be completed, followed in order by the work on groups No. 1, No. 2, No. 3 and No. 4.

Construction Work

Grading work for the tracks of group No. 6 was started in February 1953. The fill material consisted of blast-furnace slag which was brought in and dumped by trucks. The track and the retarder for this group were built in place, and a temporary turnout was used to connect this group with the hump lead. The new three-unit retarder for this group was installed and the controls for it, as well as for the power switches of this group, were temporarily connected with the control panel in one of the existing towers.

The existing tracks forming new group No. 5 were low in elevation and had to be raised as much as 5 ft. With new group No. 6 in operation, the tracks of group No. 5 were removed from service and the raising of the tracks was carried out, sand being delivered in cars and dumped. The final raises were made on slag ballast. The tracks were raised by means of a Power Jack and, on the first raise, the necessary tie renewals were made. After the final raise, the tracks were tamped by a Power Ballaster.

The sand fill was brought to the yard in high-side, bottom-dump hopper cars. During the spring, it arrived moist, which hampered unloading. To assist in the unloading the railroad experimented with a Red Devil car shaker. The car shaker was carried on a push car, and was lifted on and off the cars of sand by the derrick of a derrick push car. An electric generator for powering the shaker was carried on a push car.

The three-unit retarder for this group lead was then installed and was made up from the best of the units recovered from the existing retarders. All of the switches

(Continued on page 95)

Long Freight Trains . . .

- How They Should Be Made Up
- How Handled Over the Road
- Why They Act As They Do

Railroads are learning by experience, and not always happy experience, that there is more to operating long freight trains than merely adding extra diesel units, lengthening sidings and signal blocks, and installing means of communication to enable enginemen and conductors to talk to each other when out of visible and audible range.

Among other major factors which must be evaluated and considered are the relative placement of empties and loads in the train, the instructions to be given to the engineman for over-the-road handling, the reasons for these instructions, and an appreciation of how damage can occur at some points in the train without being felt at others.

The first handicap is placed on the operation of long freight trains without damage to lading or equipment if they are made up to a given tonnage rating or track capacity without regard to the relative position of loads and empties in the train. Ideal makeup would be to have empties spaced proportionate to loads throughout the length of the train—such as alternating a load and an empty, or having a series of groups of two loads to one empty. As this type of makeup is impracticable, the majority of loads should be located in the front half of the train. Such makeup will lessen severe impact from run-in and stretch-out and will reduce coupler failures when the slack does run out.

Train action during brake applications or release is largely governed by two facts: (1) a freight car weighs, when loaded, from three to four times as much as when empty, and (2) a given brake-cylinder pressure produces the same braking force regardless of whether the car is empty or loaded. The maximum braking force on an empty car can be as great as 75 per cent of its

Some practical ideas on how every one from the yardmaster to the engineman and supervisor can help improve train handling, taken from a report by A. M. Malmgren, general diesel and air brake supervisor of the Frisco, supplemented by the discussion following its presentation at a joint session of the Air Brake and Railway Fuel and Traveling Engineers' Associations.

weight; the same force in pounds can equal as little as 18 per cent of the car weight when fully loaded.

Thus the retarding force of an empty car, proportional to its weight, will be three or four times as great as that of a loaded car, and it will tend to stop more quickly. This means that with the same brake application on each of two coupled cars, slack will be stretched if the load is ahead of the empty, or bunched if the empty is ahead. This same characteristic will apply between groups of loaded and groups of empty cars.

When the loads are at the front of the train during braking, the faster retardation tendency of the rear cars will stretch the slack and perhaps break a knuckle. This, however, is less serious than if the loads are on the rear where the lower braking ratio not only runs in the slack but causes their weight to act as a battering ram, tending to crush the forward cars by squeezing and impact action.

Diesels Too Strong for Couplers?

No small part of road damage is caused by the tremendous pulling force of modern diesel power. The automatic coupler shank, yoke and knuckle have their strength limitations just as a rail or a bridge has its carrying limits. The tensile strength of a new modern coupler without defect is 250,000 lb.; yet a four-unit freight diesel develops 248,000 lb. starting tractive force. Couplers therefore are not just yanked out—they are stretched out starting heavy trains. This situation is aggravated on the older, weaker cars in the train.

Couplers have a tensile strength only slightly greater than the pulling force of a four-unit diesel.

The greater interval between the application of the front and rear brakes on the longer trains that diesels can handle calls for changed braking rules as compared to the prediesel days of braking the shorter steam trains with stretched slack. Brakes apply from the head to the rear cars at the rate of about 13 to 14 cars per second. This delay in the application of the rear brakes on long trains will, if the rear part of the train is on a descending grade, cause the slack to close in before the rear brakes become effective. This of course results in impact, which increases with the length of the train and is greater if the rear cars are loads. Should the rear of the train be on an ascending grade when the front is on a descending grade, slack will tend to be stretched. Curves, because they increase train resistance, act the same as ascending grades.

Some people concerned with train handling and switching have the mistaken belief that serious damage must be accompanied by noticeable shock. This is wrong. Serious damage can occur at one point in the train when little or no shock is felt at another point. For example, if a light brake application to close in the slack is increased too soon to a heavier application, severe shock could be felt at the caboose but not noticed at the locomotive. Similarly, heavy shock can occur in the middle of the train without it being felt at either end.

Handling long trains is also complicated by certain characteristics of air-brake systems. The resistance to air flow in a brake pipe is not noticeable in short trains but is very pronounced on long trains. This causes the brake pipe pressure to be greater at the front of the train than at the rear, and it increases the time lag between the application or release of the front and the rear brakes.

Severe damage can occur at some part of the train without being felt at either the locomotive or caboose.

This pressure gradient or taper (difference in brake pipe pressure between the head and the rear of the train) often causes the brakes to stick on the rear of the train after a light application. The cause can be seen by analyzing what happens in the train line when the locomotive brake valve is positioned to release the train brakes.

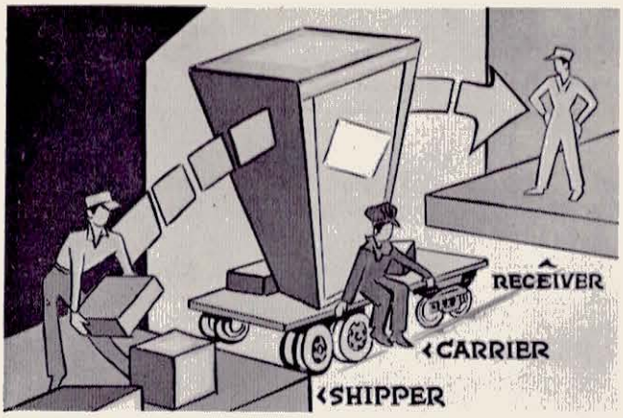
Consider a typical 150-car freight train with a train line gradient or taper of 10 lb. This means that with the locomotive feed valve set at 70 lb., the brake pipe pressure will gradually diminish from near 70 lb. at the head end to 60 lb. at the rear of the train. Train line taper is increased by leakage, or by any conditions which require greater air flow through the train line. It is therefore greater during release when the compressor is supplying air to the train line to build up the pressure, and it is this pressure build-up which causes the pistons in the AB valves to move to release the brakes.

Assuming that the taper—which was 10 lb. when the air flow through the train line was merely sufficient to compensate for leakage—increases to 15 lb. with the greater flow required to build the train line pressure back to 70 lb. Pressure at the front part of the train will be near 70 lb. before it reaches 55 lb. (70 minus 15) at the rear. Therefore with a 10-lb. build-up to release the front brakes there is only 5 lb. to release the rear brakes.

Train line resistance to air flow is not noticeable in short trains but is very pronounced in long trains.

Furthermore, the rate of pressure build-up slows down appreciably as the pressure approaches the feed-valve setting (on the locomotive), i.e., as the pressure differential across it decreases. With this slow-down the rate of recovery of the train line pressure at the rear of the train (and hence release of the rear brakes) is a relatively slow process. It is therefore important that applications be heavy enough to insure that all brakes release.

These are some of the problems which must be considered in operating long freight trains and in writing the rules for handling them. Such rules must be general and broad enough to cover the myriad conditions of profile, type of locomotive brake equipment, the make-up, length and speed of the train, and the weather. The engineman must think of the rules, and employ them with judgment based on experience, in planning brake application and releases, taking into consideration all the existing conditions.



Here's a Way to Regain Business

Says C. A. CHURCH
Engineer, Locomotive and Car Equipment Dept.
General Electric Company

One of the best ways for transportation companies to get more traffic is by helping their customers cut overall transportation costs. The overall transportation job involves movement within the shipper's plant, the long-haul move by the common carrier, and the movement at the receiving plant.

The cost of this complete transportation job frequently is nearly half of the price of a finished product, with the common carrier receiving only a small part of it. The rest of this sizeable sum is taken up in intraplant handlings, packaging, marking, etc. Businessmen realize this and are attempting to do something about it. They need help, and in the long run they will give their traffic to the carrier which helps make their *overall* transportation costs lowest. The railroads, of all the common carriers, are best equipped to so help shippers and receivers, and thereby regain much traffic diverted to other transportation agencies.

Early in man's history, each person did everything for himself. Soon man found that by specializing on one product or skill, and exchanging his output with neighbors who specialized in other lines, he could improve his standard of living and enjoy more of the compensations of life. Craftsmen then began to devote more of their time to their specialty and to depend more and more on others to bring them raw materials and to distribute the finished products. Thus the specialist in transportation was born. Eventually, the transportation man began to operate on regular schedules between settlements, and the pattern was set for today's common carrier, which moves man's goods long distances with relatively little human effort. Today, freight is transported swiftly, safely and for a relatively small cost. Today a ton of material can be moved on land for a few cents, or can be carried in the air a thousand miles in a few hours.

This article is adapted from a paper submitted in the New York Railroad Club's 1953 Roy V. Wright Memorial Essay Contest. Illustrations are from a slide film made by the author.

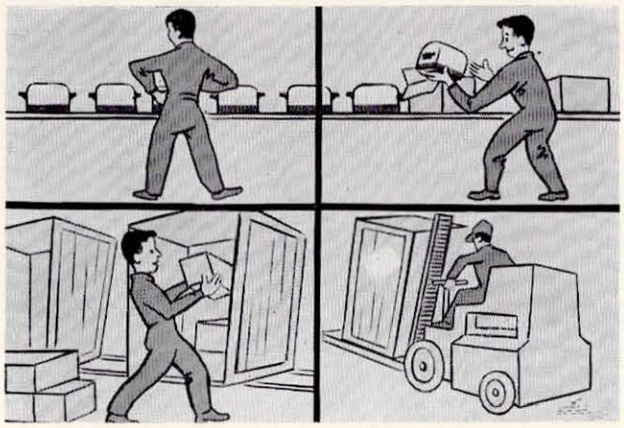
Despite this yeoman service of the common carrier, about 40 per cent of the price of a finished product still goes for transportation costs in one form or another. However, less than one quarter of this amount, on the average, goes to the common carrier. The remainder of the transportation costs are incurred before and after the common carrier has done his work. Often the packaging, marking, weighing, loading, and moving of goods to outgoing terminals represent 20 per cent of the business cost and may add several days to the production cycle. The layout of the receiving room, the number of times a shipment is handled, the size of the storage area and inventory are other factors that affect the overall transportation job.

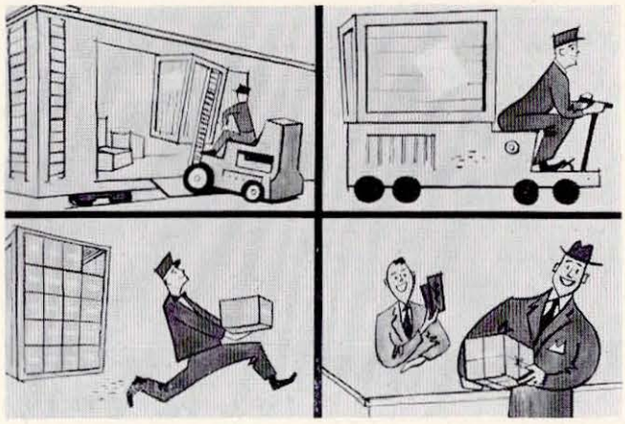
In recent years businessmen have become more conscious of the fact that the freight bill from the common carrier is often the smallest part of his transportation bill. Consequently, attention is now shifting from the long haul, which is well under control, to terminal and handling expenses of both the shipper and the receiver.

New Materials Handling Techniques

Businessmen are scrutinizing this problem through the glasses of a new "expert" emerging in the transportation field. He is the man who knows material handling and related operations required to transport raw material from the receiving dock through the factory process and to deliver the finished product to the shipping dock. The accomplishments of this man sometimes have been startling and profitable to shippers, receivers and common carriers alike. For example:

1. Savings of 20 to 90 per cent have been realized by some firms after studying their packaging methods. Many companies now strap packages together into large bundles that can be more readily moved with modern mechanical equipment. The goods now move faster,





damage losses are down and effective storage capacity is increased.

2. Conveyors installed in a freight station now permit merchandise to be processed completely from incoming dock to outgoing dock without once touching the floor. At one station, pick-up and delivery trucks are unloaded in a half to three-quarters of an hour, against two to three hours with the old method. A shipment received late in the afternoon is on its way a day earlier as a result of reduced handling and decreased congestion.

3. In the lumber industry, mechanical handling equipment, like the spectacular truck that straddles a whole pile of lumber and carries it away, has reduced unloading time per unit in many lumber yards from 24 to 1½ man-hours.

The work of the material handling specialist is exploding the all too prevalent impression that transportation costs are made up primarily of freight bills from common carriers. He has pointed out quite clearly that the transportation job is not just moving goods from terminal to terminal.

Transportation Costs

Transportation costs begin when the product reaches the end of a shipper's assembly line. It then must be packaged, marked, sorted and moved to the shipper's outgoing dock for the common carrier to pick up. The job ends only after the consignee has taken the shipment from the receiving dock, moved it to a storage area, unpacked the items, and transferred them to the point of use.

This overall transportation job can be divided into three segments: (1) the movement within the shipper's plant; (2) the long-haul move by the common carrier; and (3) the movement at the receiving plant. Three parties—the shipper, the common carrier, and the consignee—in effect constitute a relay team. Each must pass the baton smoothly on to the next, if transportation cost and time are to be lowered and the overall performance improved.

The shipper, however, is usually a specialist in manufacturing, agriculture or mining, and as such has production costs foremost on his mind. He may be conscious of the advantages of modern material handling, but he is most interested in its effect on the production process and not as it relates to the common carrier. The shipper's traffic man, if he has one, usually centers his activities on day-to-day routings, rates and reciprocity. Seldom does he have the time, the training, or the authority to instigate and effect major improvements in the overall transportation process.

The Common Carrier

The common carrier knows main-line haulage well—how best to pick up individual shipments, fit them into scheduled freight movements and deliver them safely at their destinations. However, he seldom goes beyond the shipper's dock except to sell his particular services or upon request. His chief interest at the receiving plant is to unload his vehicle, check to see that the lading is undamaged, and then collect his fee.

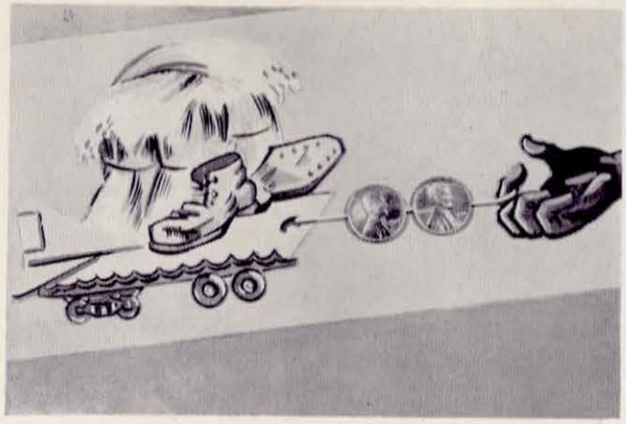
The receiver is concerned mostly with the time factor, and is interested in speed and dependability. Some larger companies in mass production activities have well organized and efficient receiving departments, but most of their relationships with the shipper and the common carrier are limited primarily to expediting and follow-up. The receiver wants goods delivered on time to keep assembly lines going and to keep dealers' shelves full of finished goods.

Each member of the transportation "relay" team has his hands full with his own problems, and has little understanding of the overall operation. Consequently the members of the "team" generally are unaware of real transportation costs, of which rates and time are only a part.

The presence of a material handling expert could greatly improve the performance of this team. A transportation man with broad knowledge and experience could point out the places where better integrated operation would be the happy answer for all three members of the team. The end result would be drastically lowered start-to-finish transportation costs.

A Place for the Railroad

The railroads, of all the common carriers, are by far in the preferred position to take the lead in providing application specialists for this new era of "start-to-finish" transportation. I think that, by taking the initiative, they can regain much of the prestige, glamour



and business they have lost to some of their newer and more aggressive competitors. The railroads have long and varied experience. They know main-line haulage thoroughly and how best to coordinate the various types of carriers. They already have solved material handling problems of their own that dwarf those of most of their customers.

The railroads serve all types of customers, thus they can use what they learn in one industry to help a customer in another. They already have established contacts with all shippers of any size, and the resources and stability to carry through their suggestions and commitments.

To capitalize this situation, the railroads need only distill this pertinent information, blend it with a knowledge of production material handling, and make the resultant transportation application "engineer" available to the railroad people already calling on shippers and consignees.

The "Application Engineer" at Work

With this combination of knowledge, one eastern railroad, working with a large manufacturer, was able to get a shipment of ten cars per week back on the rails. This "sale" was made by carefully studying the transportation job from start to finish and making recommendations that integrated the operations of the shipper, the railroad and the consignee. Today the finished subassembly goes directly off the manufacturer's assembly line into a special shipping case. This shipping case is easily transported to the shipping dock where it becomes an integral part of the special car the railroad supplies for this job. Preparation for shipping is greatly simplified, and loading time is much less. Unloading at the receiving end also is faster and simpler, and the cost of feeding this unit into the consignee's production line is much less. Not only did the railroad add to its carloadings, but the shipper's overall transportation costs were reduced about 25 per cent.

In another instance, eight cars per day of process material started going into a manufacturing plant over the tracks of a railroad serving that plant, after the basic requirements of the manufacturer had been uncovered and correlated with the service available from competitive common carriers. Previously time in transit had been thought to be the deciding factor. An examination of the problem revealed that *dependability* was the all important consideration. So long as the railroad delivers eight cars every day *on time*, rain or shine, which potentially is the railroad's forte, this material will stay on the rails and the manufacturer will continue to save $75 per carload.

A large shipper, with a chain of factories serving thousands of customers, by the addition of a relatively few warehouses was able to make mass lot shipments farther into the distribution channel. Now all factories ship in carload lots to these central warehouses. At these central points, individual customers' orders that may involve many different items are processed and combined.

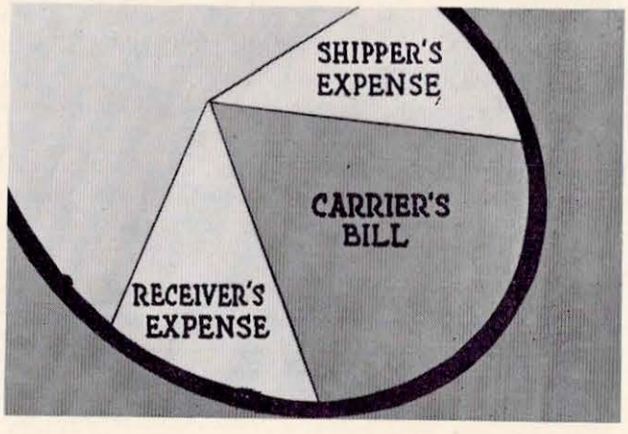
With this arrangement, the mixed shipment goes to the customer at a large quantity rate. Each additional carload is money saved for the customer and that much more business for the railroads.

Small Shippers Grow

For every big shipper that enjoys some of the benefits of coordinated transportation there are literally hundreds of smaller ones unaware of the improvements to be had, and the money to be saved, by a start-to-finish analysis of their transportation routine. Especially are they oblivious of the part that the railroads can and do play in the movement of goods. Plants too often pay overtime for unloading incoming vehicles when their railroad siding is empty. Others are paying a premium for speed, when they really want *on time* performance.

Too many are muddling through on their own, with a wealth of experience available from the railroads for the asking. They all, large and small, need the sage advice and helping hand of a seasoned start-to-finish transportation specialist.

This situation opens new opportunities for the railroads—extends the horizon for potential business far beyond the rail head. Like the pioneer railroader who bridged rivers and tunneled through mountains to serve new undeveloped areas, so must the modern railroader extend his "lines" deep into the factory and far out into the market place. Only then can he establish satisfactory contact with his customers, and bring to them a full and true measure of the profitable scope of railroad transportation.



Unlike his predecessor, however, the modern railroader, in the minds of most people, is no longer the obvious or accepted standard-bearer of transportation progress.

His performance has been eclipsed by the glamourous proximity and showmanship of the newcomers in transportation. To regain his rightful prestige and stature, the modern railroader not only needs to make his experience and know-how available to shippers, but also to merchandise these talents as well. His opportunity is to be both a transportation specialist and a salesman. Those people who can perform these dual roles, in this challenging new era for railroad men, will bring credit to themselves, profit to their companies, savings to shippers everywhere, and strength to America's way of doing business.

MORE TRACKS FOR MORE TRAFFIC

(*Continued from page 89*)

and the retarder were operated from the old control tower, the tower being moved on skids from one location to another as required, with the connecting wires temporarily trailing on the ground. A lap-switch turnout, assembled at one side, was then cut into the lead and the track group was ready for service.

The tracks of the other track groupings were treated similarly. The only departure from this procedure was that the tracks in group No. 1 and No. 4 were too high at their west ends and a portion of these tracks had to be removed for excavation purposes.

The last grading work done was on the hump lead, which was raised on slag ballast about 2.5 ft. at the crest to produce the desired accelerating gradient. This work was done at various times when the hump lead became available during the longer breaks in switching operations.

Difficult Signal Assignment

One of the difficult assignments of this project was that of the signal department. These forces had to keep all retarder and switch machines in operation during the change-over (except those of the track group that was out of service), which meant connecting them with the old control towers, maintaining the connections as the towers were moved from one location to another, and connecting the new retarders and switch machines to the control panels in the new hump office and new retarder-control tower. In addition to this work, they had the job of setting up their new shop and office in the new headquarters for this department.

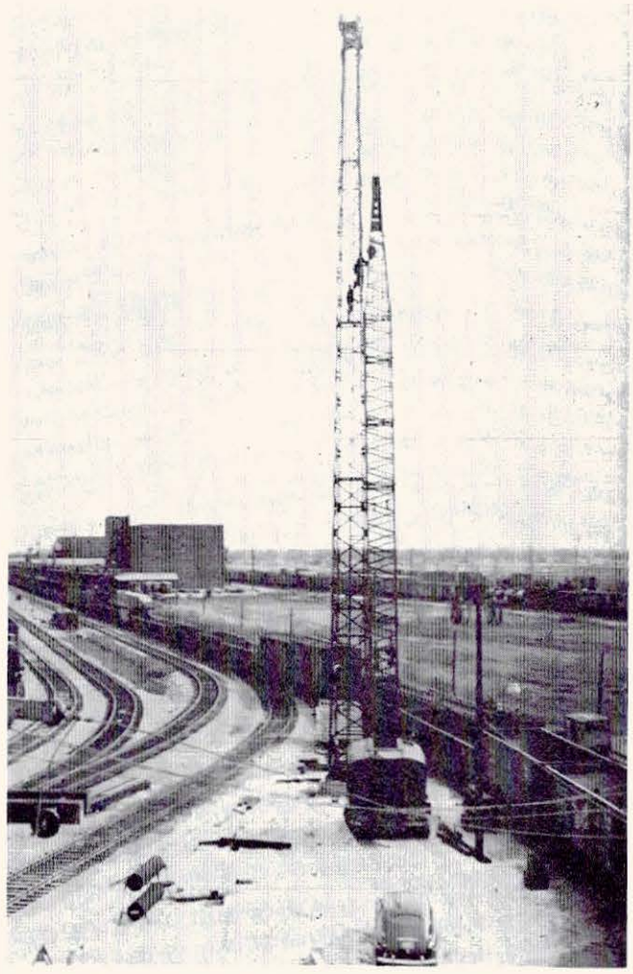
For the most part this project is completed and in operation.

Still to be carried out is the construction of a short length of third eastbound main track, including automatic signaling, between the east end of Blue Island yard and the town of Dolton, Ill.

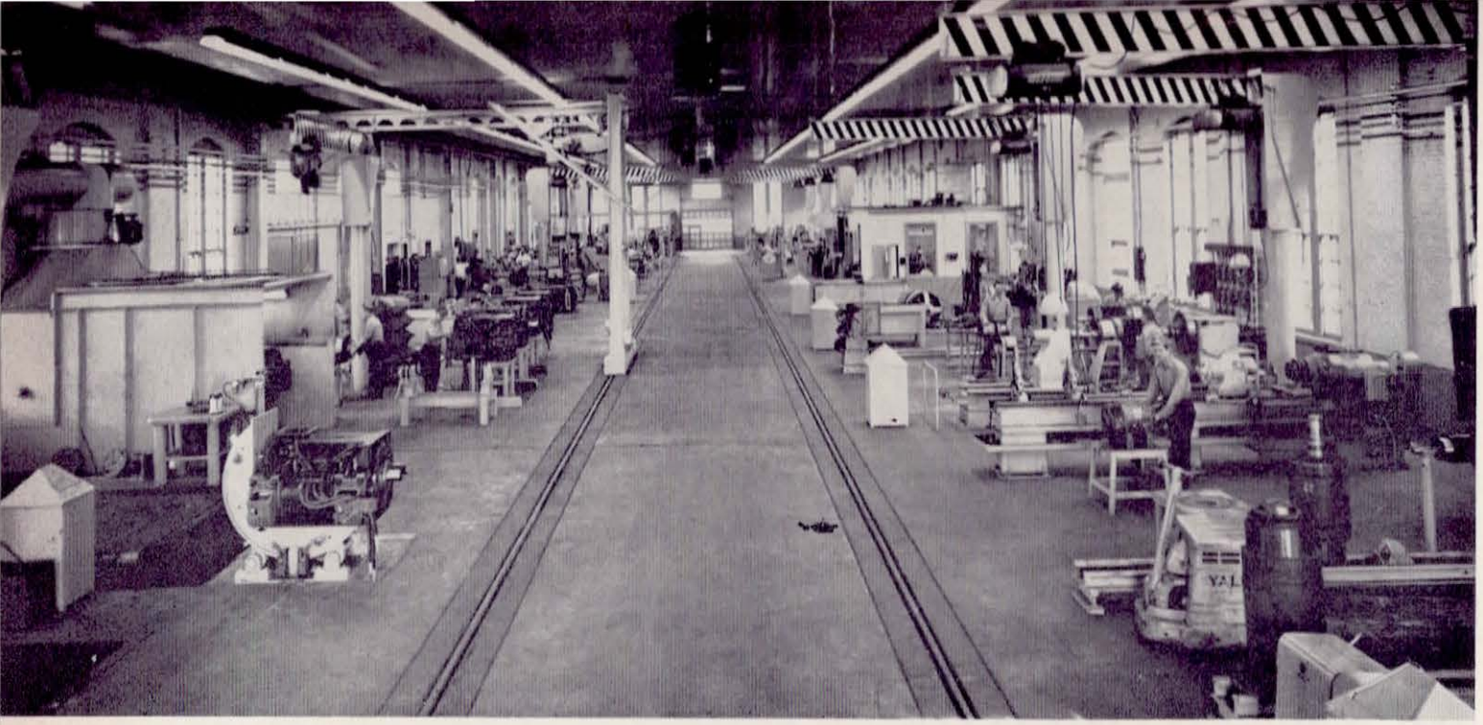
The yard-revision work was completed with minimum interruption to switching operations, which was the result of close cooperation between the interested departments.

A small-scale model of the yard was made prior to the construction work so that the effect of each work stage of the project could be visualized. The model was made in two sets of small pieces designed to fit each work stage. One set showed the old yard arrangement and the other the new, the pieces of each set being interchangeable with the other.

The project was carried out under the general direction of F. H. Simpson, chief engineer of the Indiana Harbor Belt, and under the direct supervision of F. A. Hess, assistant chief engineer. The installation of the retarders and signals was under the direction of John J. Corcoran, chief signal engineer, and under the direct supervision of C. F. Brooks, signal engineer.

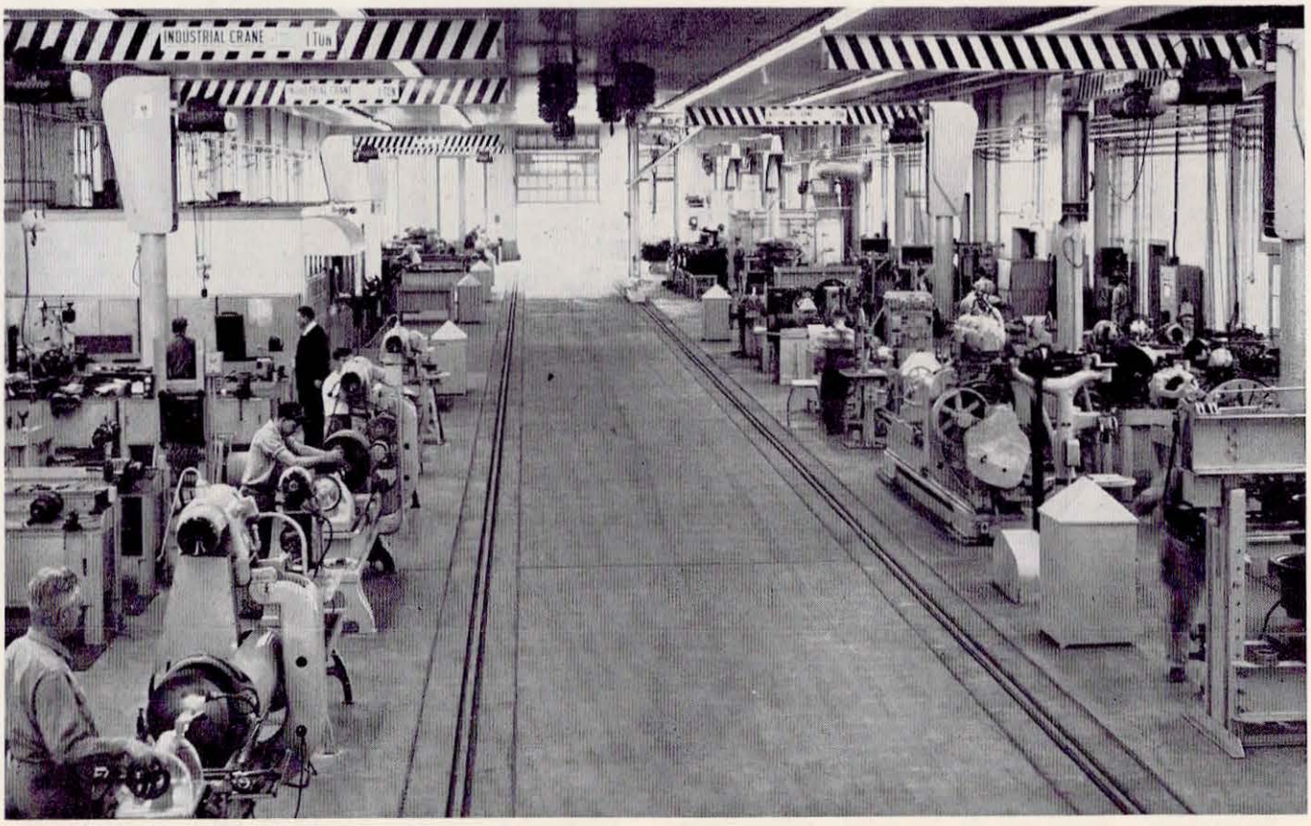


ERECTING A 100-FT. FLOODLIGHT TOWER was simplified by prefabricating frame on ground and raising it with crawler crane.

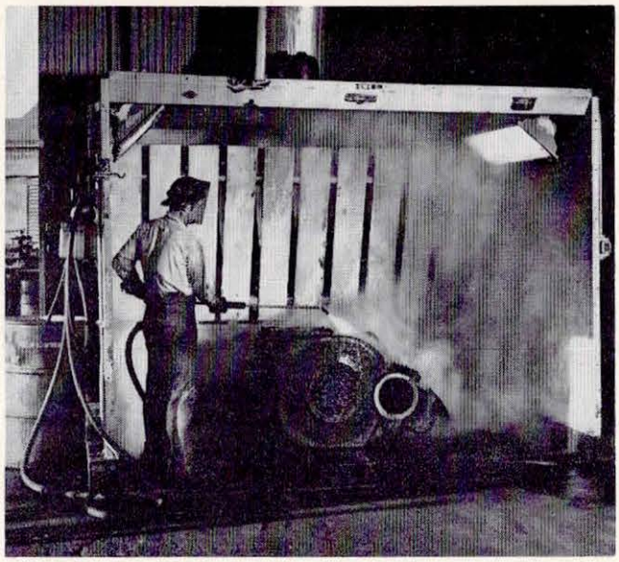


DIESEL TRACTION MOTOR END of the Baltimore & Ohio's Mt. Clare electric shop.

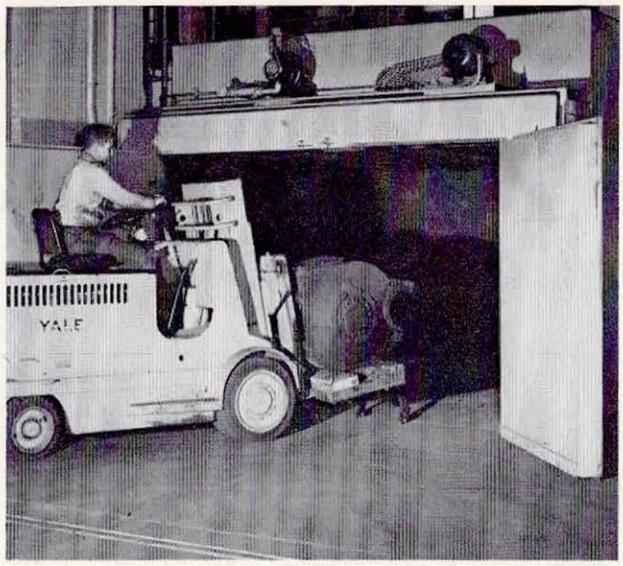
Here Is an All-Purpose



IN THE FOREGROUND is the section of the shop which maintains all electrical equipment except diesel traction motors and generators. The diesel section is at the far end of the shop.



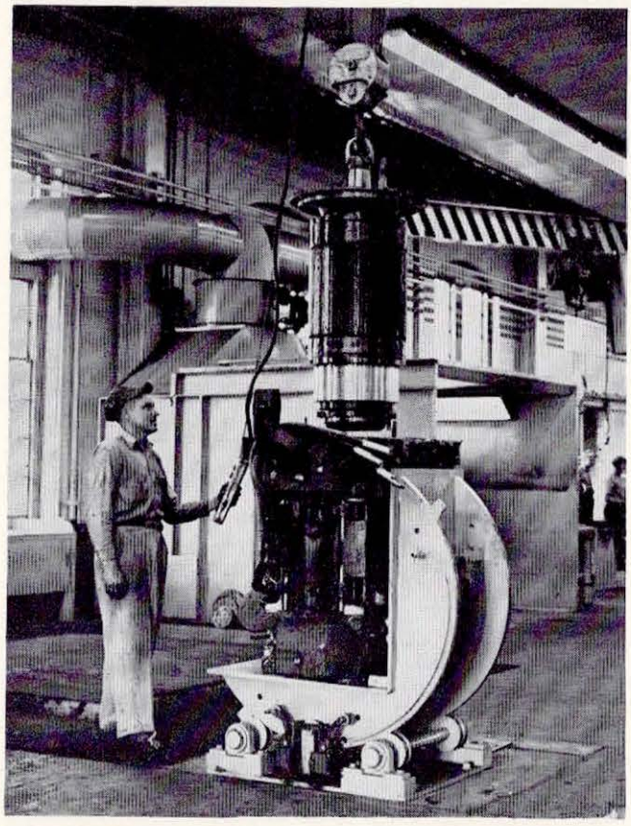
BEFORE MOTORS get into the shop, they are steam cleaned.



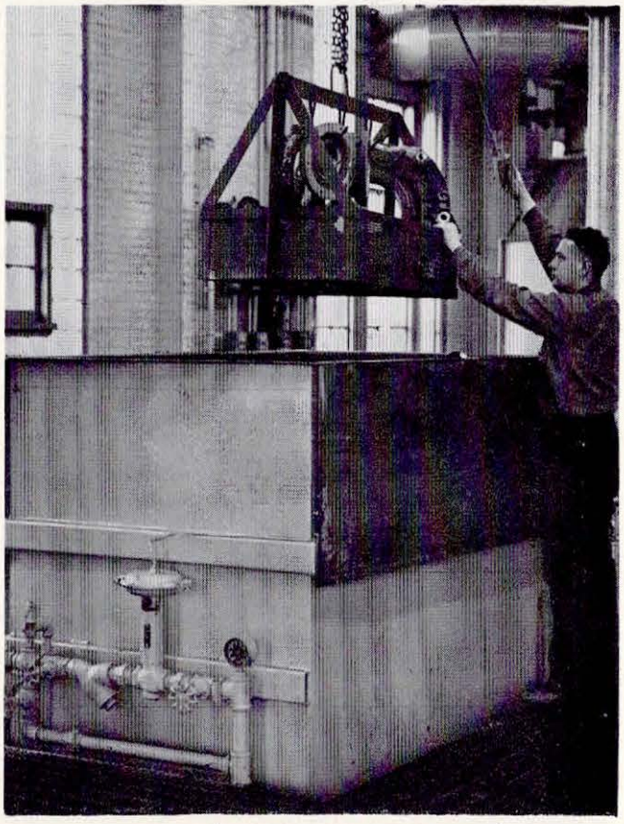
THE FORK LIFT TRUCK brings the cleaned motor inside the shop and puts it into the gas-fired oven for drying.

Electric Shop

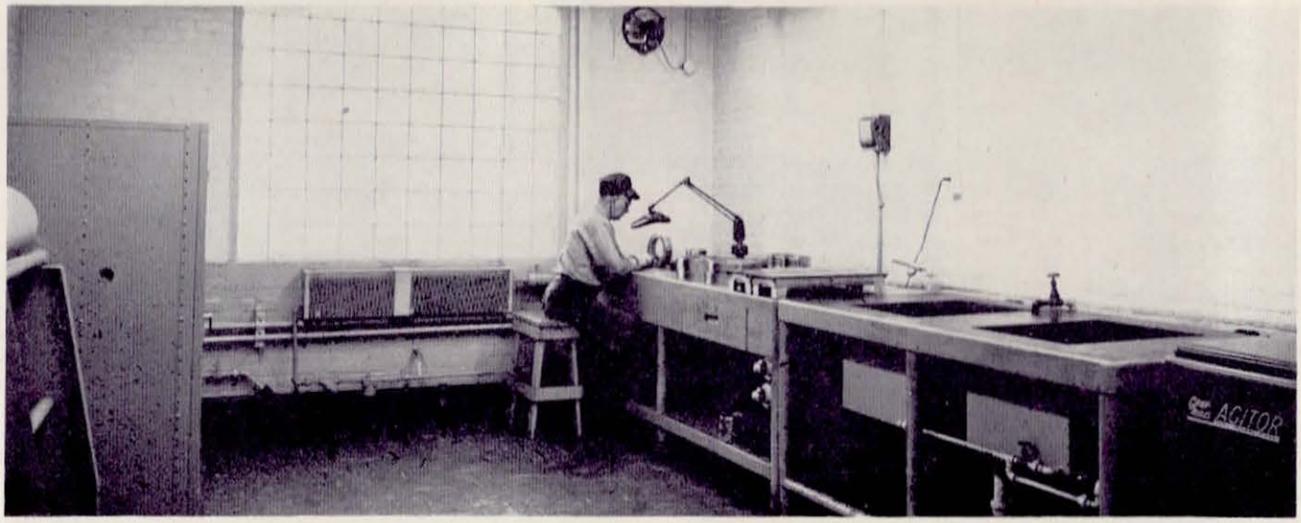
New B&O facility will perform about half of railroad's heavy diesel electrical overhaul and nearly all maintenance of car lighting, air conditioning and general purpose motor and control equipment →



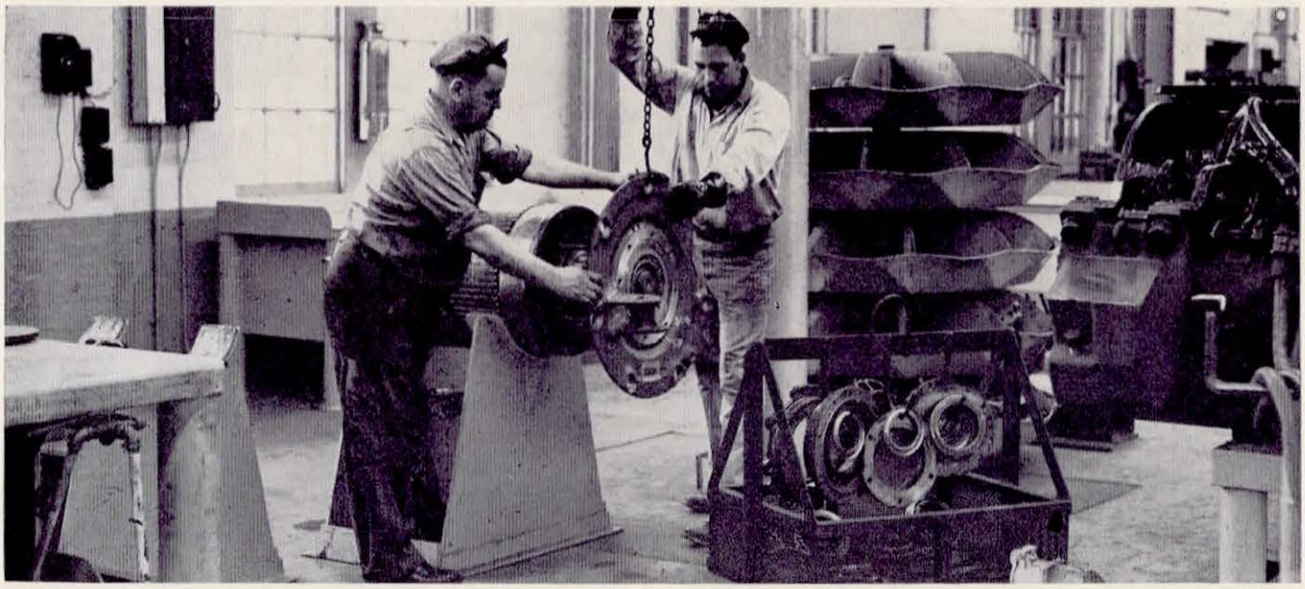
SHOP-BUILT UP-ENDERS turn the motors at the stripping and assembly stands. Limit switches stop the up-ender



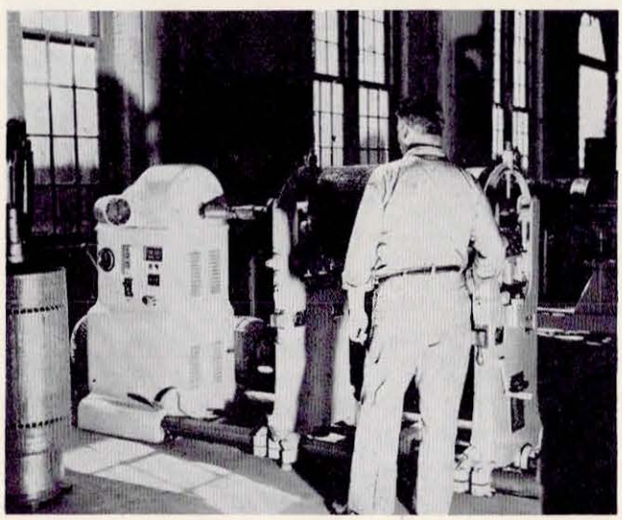
at the horizontal and vertical positions. A BASKETFUL of small motor parts (right) goes into the degreaser.



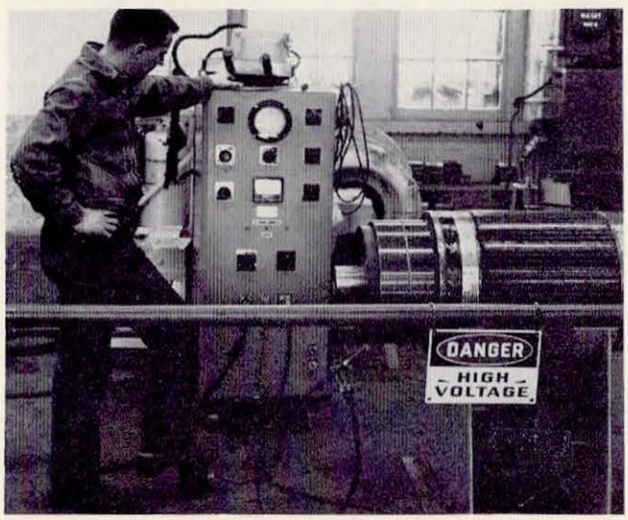
BEARING ROOM in which bearings are de-magnetized, cleaned and inspected.



AN OVERHAULED MOTOR being reassembled. If any of the small parts in the basket is defective, a spare is drawn from the store in the racks behind the basket.

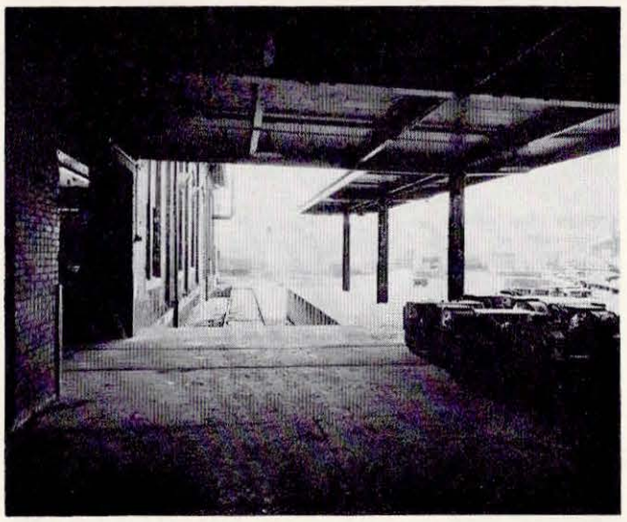


CAREFUL BALANCING does much to reduce vibration and extend motor life.



A FINAL EXPLORATION of insulation condition in the finished armature is made with a surge tester.

THE SUB-STOREROOM and the shop office with its potted plants.



THE SHIPPING PLATFORM from which overhauled motors are loaded into cars and sent to change-out points.

At its Mt. Clare shops in Baltimore, the Baltimore & Ohio has consolidated all the electrical maintenance work done at this point under one roof. This includes work done previously in the separate air conditioning, car lighting and general purpose electrical shops. The shop does all of this kind of work for the whole system, except for some operations on the west end of the property for which time out of service or shipping costs would be too high. In addition, the shop is equipped for production-line basic overhaul work on diesel-electric locomotive traction motors and main and auxiliary generators.

The shop is 300 ft. long and 70 ft. wide, all on one floor. It is modern in every respect. The gray concrete floor has an inclusion of steel powder which renders it highly resistant to wear. The lower three feet of the walls are finished in a medium green and the upper walls are a light green. The 20-ft. high ceiling is made of corrugated aluminum which is an effective sound deadener. Machine tools and other shop equipment are finished in two-tone gray. Vertical columns of jib hoists are gray while the booms are yellow with diagonal black stripes. The one-legged gantry crane is yellow.

In one corner there is an enclosure devoted to the repair of cutting torches and on one side at the center of the shop is a built-in and ceiled office and substoreroom. An outside side extension of the building, 25 ft. by 44 ft., houses a bearing cleaning and inspection room, and locker and washroom facilities. There is also an outgoing shipping platform on this side of the building.

The shop is lighted by four rows of fluorescent lighting fixtures. These are made up of continuous rows of open-end procelain-enameled industrial units, each unit being equipped with two 96-in. standard cool-white slimline lamps. The spacing between each of the two side rows of units is 14 ft., and the center spacing is 20 ft. Mounting height is 19 ft. 4 in. The total area illuminated is 19,872 sq. ft., and the total lamp wattage (excluding ballast losses) is 30 kw., making 1.52 watts per sq. ft. The average lighting intensity on the working plane, after the system had been in service for some time, was 60 footcandles. The shop is heated by 5 ceiling-mounted unit heaters.

As a final touch, there is a potted plant, on a stand, on either side of the foreman's office. The cast iron buffer plates on the large end door frames explain the origin of the building, and provide the only suggestion of any connection with the past. They bear a cast-in inscription which reads—"B&O Bridge Shop, May 1882."

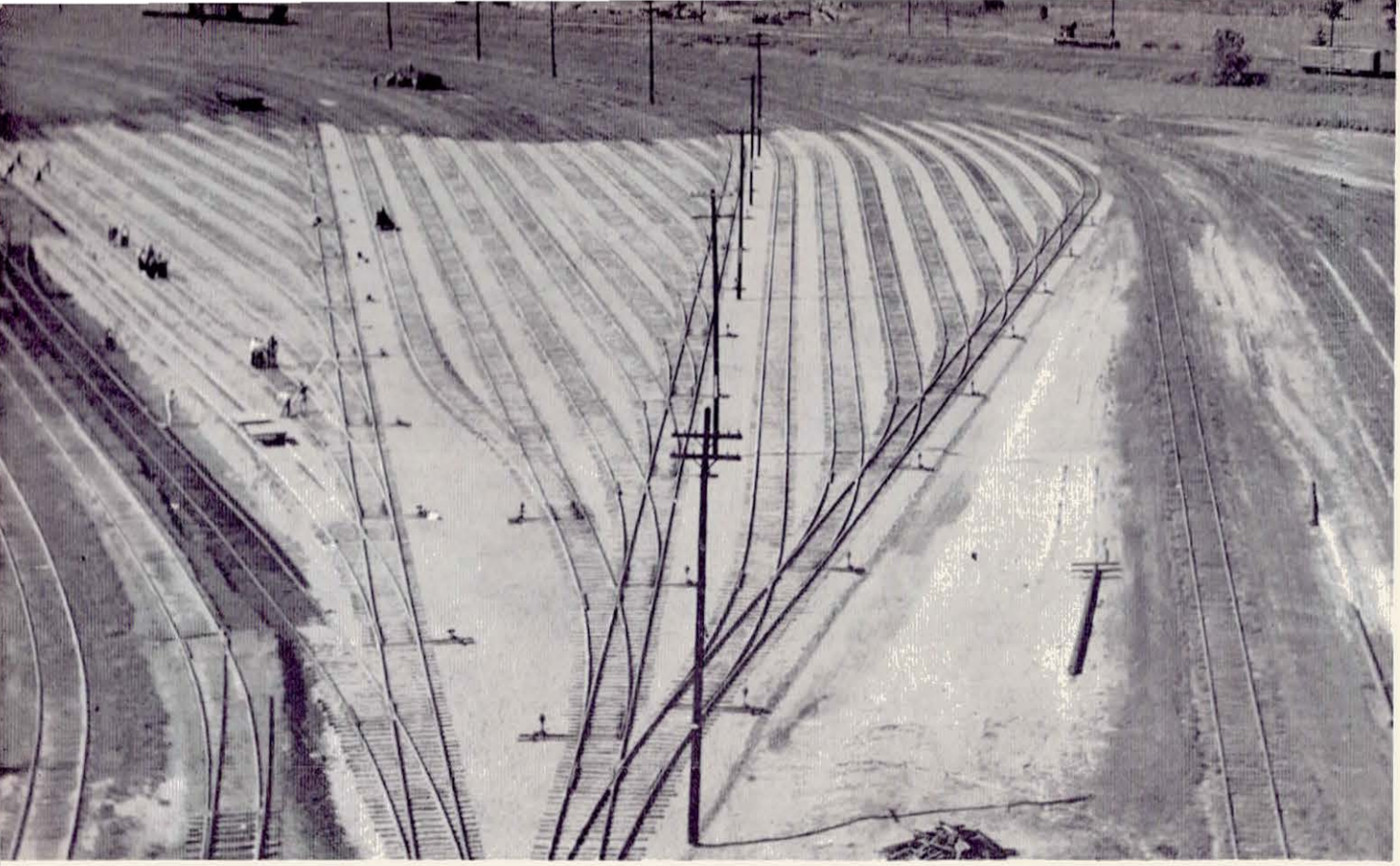
Half of the shop area is used for diesel locomotive electrical equipment repairs. Working one 8-hour trick per day, the shop has a capacity for handling basic overhaul and light repairs on approximately 75 traction motors per month and in addition a number of main and auxiliary generators. At present no facilities are provided for traction motor armature and commutator repairs. Traction motor and generator armatures requiring heavy repair are sent to outside repair shops.

The other half of the shop area is devoted to the repair of nearly all other electrical equipment used by the railroad. In it are maintained shop motors, pump motors, crane motors, air conditioning equipment, car lighting apparatus and miscellaneous auxiliary and control equipment. Three benches in the general purpose shop are used for overhauling diesel locomotive contactors and relays.

Material Handling Equipment

A five-ton, one-legged, floor-operated gantry crane serves the full length of one side of the shop on which the heavier work is done. The floor rail of the crane is 27 ft. from the wall. A second floor rail is laid on the opposite side of the shop to permit installation of a second crane at some future date.

On the crane side of the shop, there are five jib cranes, two of three-tons capacity in the section where motor and generator frames are handled, and three of one-ton capacity. On the opposite side of the shop there are six one-ton jib cranes. The crane service is supplemented by a five-ton, electric fork-lift truck and two electric walker-operated trucks.



SOUTH END OF YARD "A" was regraded and rebuilt to change over from hump operation, using car riders, to gravity operation.

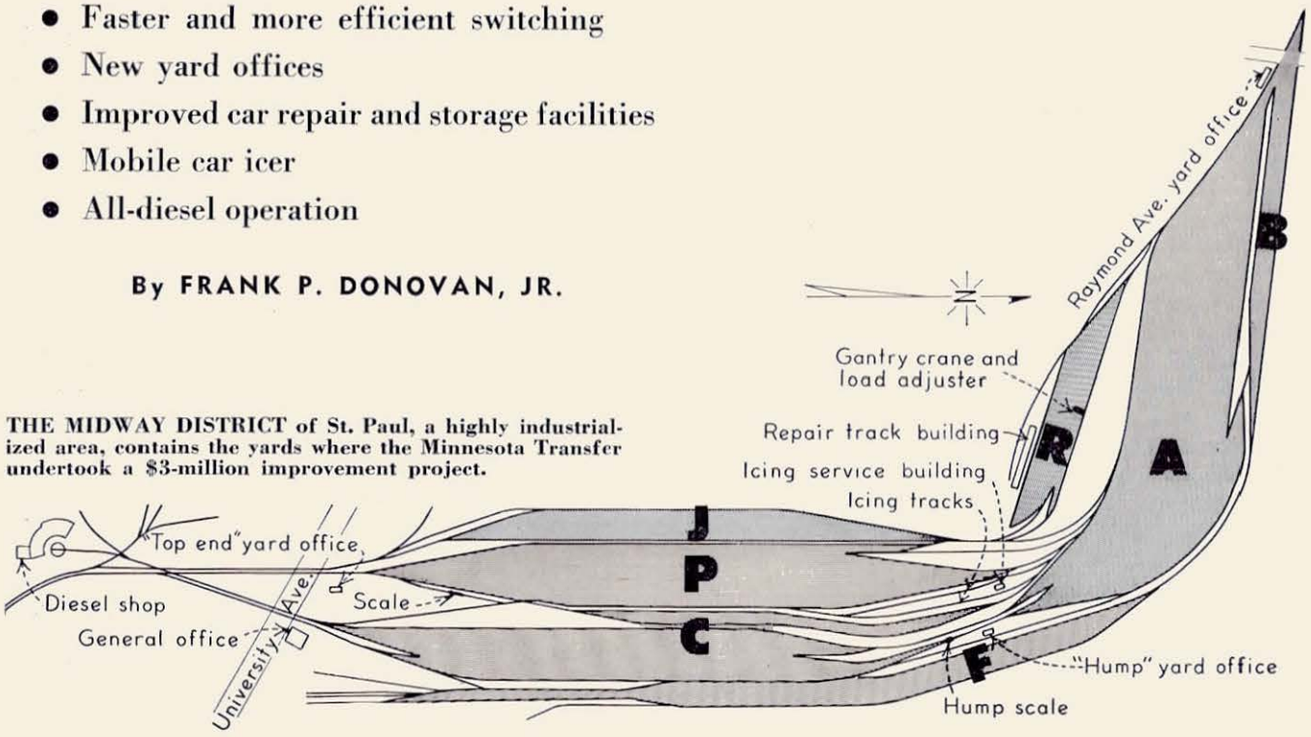
MINNESOTA TRANSFER'S . . .

Modernization Cuts Yard Time

OPERATIONS EXPEDITED BY . . .

- Faster and more efficient switching
- New yard offices
- Improved car repair and storage facilities
- Mobile car icer
- All-diesel operation

By FRANK P. DONOVAN, JR.



THE MIDWAY DISTRICT of St. Paul, a highly industrialized area, contains the yards where the Minnesota Transfer undertook a $3-million improvement project.

Minnesota Transfer's $3-million improvement program in the Midway district of St. Paul is virtually completed. Authorized by nine roads owning the "Transfer," the changes, by actual check, have speeded up transfers 27.1 per cent. A check was made in October 1950 before improvements were made, and again in October 1951 after partial modernization. No subsequent analysis has been made, but it is estimated current changes have upped the saving another 10 per cent.

Rearrangement of Yards

The biggest factor in speeding up transfers is probably the extensive revision of yards and the use of gravity switching in place of hump operation. Formerly, "A" yard, the road's largest, was hump operated. It is a 42-track L-shaped classification-and-departure yard with a capacity of 1,500 cars. In place of the traditional "hump" there is now a short 2.5-per cent grade which tapers down to 0.3 per cent, then gradually flattens out to a level grade.

Another major revision was the conversion of the old 9-track "P" yard from a storage facility to a classification-and-receiving yard. In doing this, flat switching was replaced by gravity operation in much the same way as in the "A" yard. It was enlarged to 29 tracks, 11 of which are new. The nine additional tracks were taken from adjacent yards. "P" yard now has a capacity of 1,300 cars.

To permit longer trains of the Rock Island and the Milwaukee to pull into a 27-track receiving-and-departure yard, known as "C" yard, three tracks were extended to 70-car length. This was done by running the tracks, end-to-end fashion, into "F" yard which had been used primarily for storage. This change has eliminated most of the doubling formerly required when making up trains.

Other readjustments have been made in various lead tracks and switches to effect quicker and more efficient operation. In some instances curvature was eased. Rail of 90-lb. section was used on the leads, while relay rail up to 112 lb. was used in the bodies of the yards. The tracks are gravel ballasted and well-drained, and have catchbasins located near each switch.

Gravity operation has resulted in considerable saving in cost and much speedier operation than the former hump method. Cars are dropped faster since it is unnecessary to wait for riders to return, as was the case in hump operation. Claims have been reduced because of less buffeting of equipment.

New Yard Offices Built

In conjunction with the track changes, three new concrete-block yard offices were erected, replacing obsolete wood structures. All yard offices have towers with full-vision, insulated, double-glass windows. Welfare facilities for employees are provided on the ground floor of each building.

Two yard offices have pneumatic tubes for carrying waybills and messages to and from central headquarters on University avenue. The third, or "Top End," yard office is so near headquarters that pneumatic tubes are not warranted. The tubes speed up interoffice communications, making it unnecessary to rely on the messenger service used previously. Two tubes, 6,000 ft. long and 4 in. in diameter, were used for this system. They extend from the headquarters building to the Middle Yard office (also known as "The Hump"), thence to the office at Raymond avenue. The latter is at the extreme north end of the yards. Middle Yard office is a station on one tube where messages can be sent either to the general offices or to the Raymond Avenue office.

All yard offices are connected by telephone. In addition, two-way loudspeaker systems provide contact with crewmen and other employees. Paging speakers are mounted at the tops of poles, while small speakers are mounted about five feet from the ground. A "talk-back" switch, having a signaling button, is provided for shifting the communication from the paging speaker to the facility nearer the ground.

Three 120-ft. towers, on which floodlights are mounted, illuminate the yards at night.

Car-Repair Facilities

Serving the three northern "transcontinentals," Minnesota Transfer gets many cars coming from the Pacific

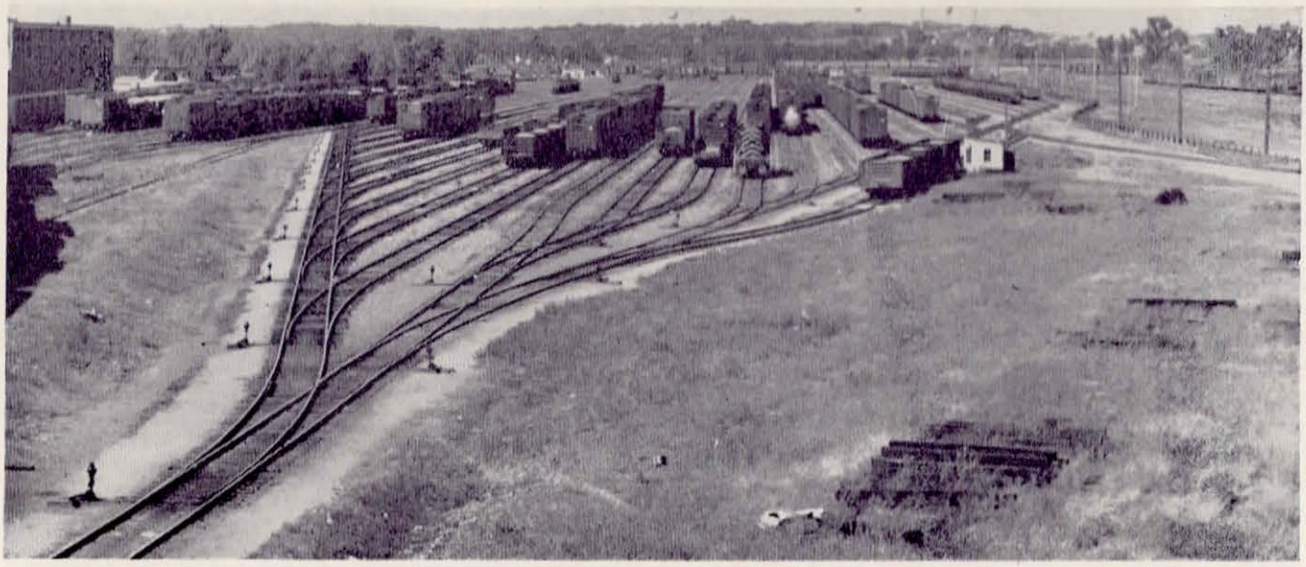
FACTS ABOUT THE "TRANSFER"

In the Midway district of St. Paul, the Minnesota Transfer interchanges cars with the Great Northern, Chicago Great Western, Milwaukee, Minneapolis & St. Louis, North Western (Omaha), and Rock Island. An integral part of the railway's interchange facilities is its so-called Belt Line, which is that part of the road serving many industries outside of the city limits. This line links up with the Northern Pacific and the Burlington at Park Junction, which is about a mile north of the Midway area, and with the Soo Line at Bulwer junction, some five miles farther north on the Belt Line. Minnesota Transfer crews pick up and set out cars for the NP, "Q" and Soo. Each of the roads mentioned owns a one-ninth interest in the Minnesota Transfer.

Besides transferring cars, the railway serves approximately 400 industries, which account for about 40 per cent of the switch-engine shifts. Much of this industry work is done around the clock. In the heavily industrialized Midway district, as well as on the Transfer's "East Hennepin Lead" in the northwestern part of Minneapolis, the tracks are often adjacent to, and sometimes within, street limits. Considerable difficulty was caused by automobiles running into the switch engines at night. But Scotchlite reflective tape and markings were applied to the sides of the locomotives; the result is that not a single car has run into a locomotive since the application.

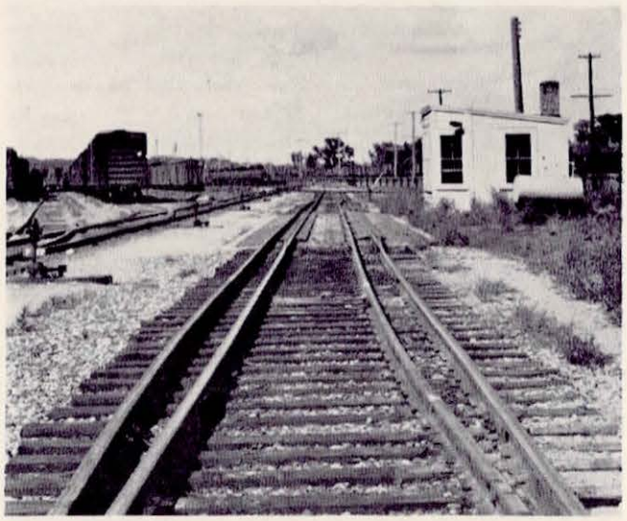
Until a few years ago some cattle were fed and watered in the Midway district, but this work is now centralized in New Brighton, on the Belt Line about seven miles north of the Midway district. The New Brighton livestock facilities include a 135-pen yard for resting and feeding cattle, a livestock scale, a sheep-sorting chute, and a new concrete-block office building.

Eighteen Alco diesels, ranging from 660 to 1,600 hp., provide the road's motive power. However, two 0-6-0 steam switchers, one equipped with a flanger for plowing snow, are kept for standby service. These steam units are oil-burners.



ANOTHER CLASSIFICATION YARD was constructed for gravity operation by expanding "P" yard from 9 to 29 tracks. This yard was formerly a storage yard.

RAYMOND AVENUE YARD OFFICE is one of three such structures newly erected to replace wood buildings.



CAR WEIGHTS are determined on the 150-ton Fairbanks-Morse track scale near yard "P."

BUNKER ICING of cars is handled by a special truck equipped with a hydraulically operated platform that raises to a height of 15 ft.

LOADS ARE ADJUSTED on cars at this combination gantry crane and load adjuster. Beam at right may be lowered to permit loads to be pushed against it.

Coast to the Twin Cities area, which is the most convenient point for making minor car repairs. For this reason the Transfer's shops are called upon to do considerable repair work in a minimum length of time. A storehouse, general office, carpenter shop, foreman's office, garage and locker room are all housed in a newly constructed modern concrete-block structure. A separate building houses air-brake testing equipment.

The shops have a steam-and-hot-water heating system which replaced a hand-fired coal-burning boiler. Considerable new machinery has been added to the car-repair facilities, probably the most versatile of which is a fork-lift truck. This vehicle is extensively used to move car wheels, carry and set couplers and draft gears into place, and do numerous odd jobs. A three-wheel "Krane Kar" also is employed.

The increased use of motorized equipment made it necessary to rearrange repair tracks so that trucks can operate between them. A two-way loudspeaker system facilitates communication between the shop office and the rip tracks.

Associated with the repair facilities is a gantry crane and load adjuster spanning four tracks. On one side is a 20-ton trolley hoist, and on the other is an equalizer beam for moving shifted loads. If lumber, for example has shifted over the end of a car, a switch engine pushes the load against the beam until it is forced back into the desired position. The load adjuster and crane are electrically operated.

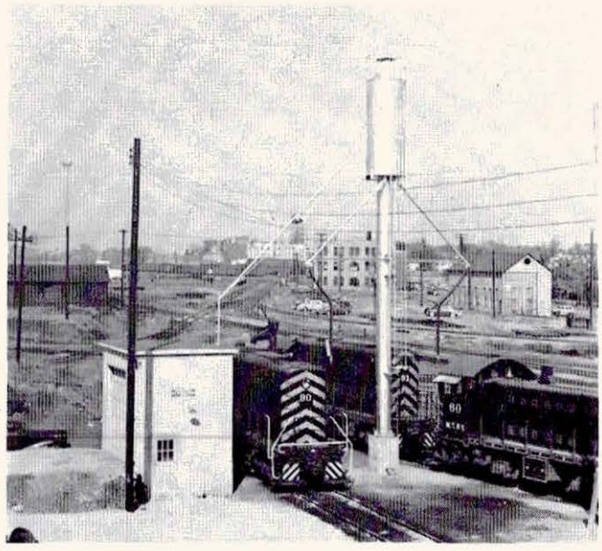
Cars Are Iced by Truck

To ice refrigerator cars, the Transfer uses a truck with a hydraulically operated platform which can be raised to the level of the bunkers. All icing is done in "P" yard, on two tracks separated by a paved road. Icing by truck has proved entirely satisfactory as well as economical, for it saves the cost of docks and vaults. It also has greatly reduced personal injuries. Ice is manufactured in a nearby plant, where it is loaded into railroad-owned refrigerator cars that are spotted for convenient reloading onto the platform truck. The truck also handles heaters for perishables in winter.

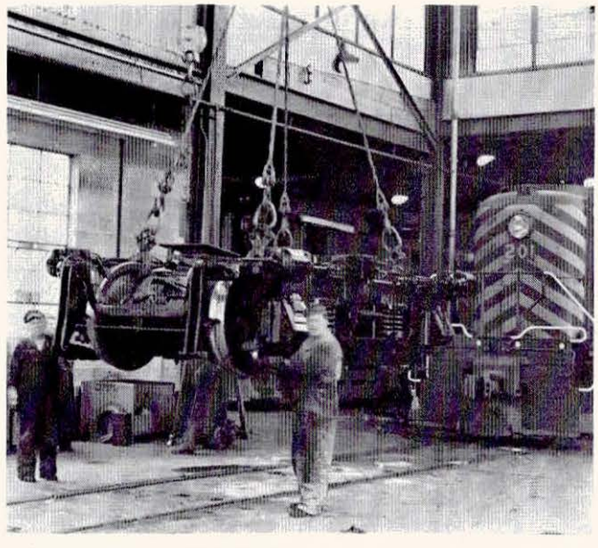
Conversion to all-diesel operation entailed revamping the 12-stall roundhouse and enlarging the repair facilities. A concrete-block addition, 70 ft. by 60 ft., was constructed at one corner of the enginehouse. It is equipped with a 25-ton overhead traveling crane and modern machinery for diesel repairs. The enginehouse is heated by unit space heaters which burn diesel fuel oil. They replace a hand-fired boiler. A 25,000-gal. diesel fuel-oil tank is adjacent to the enginehouse. Predried sand is delivered from a 10-ton tower which is served by a 15-ton storage bin built of reinforced concrete. It is purchased locally.

In addition to the yard improvement work the Transfer has virtually relaid its "Belt Line" with rail weighing 90 lb. or more.

The new buildings were constructed by J. S. Sweitzer & Son, St. Paul, and the grading for the yard changes was carried out by Carl Bolander & Sons, Minneapolis. All other work was carried out by the road's own employees. The project was under the supervision of Norman F. Podas, chief engineer of the Minnesota Transfer.

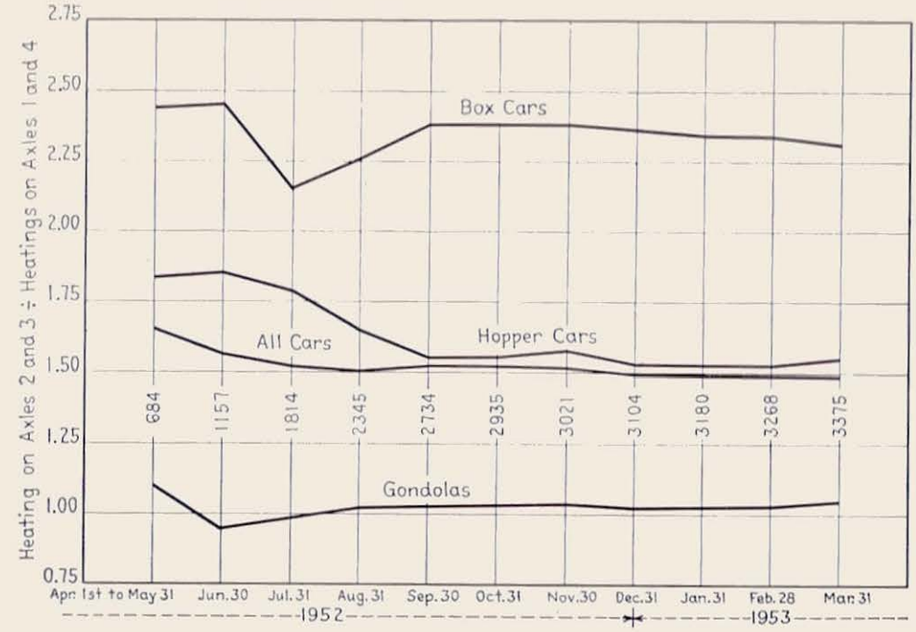


SAND IS FURNISHED to diesel locomotives from this Ross & White sanding plant. Sand is purchased predried.

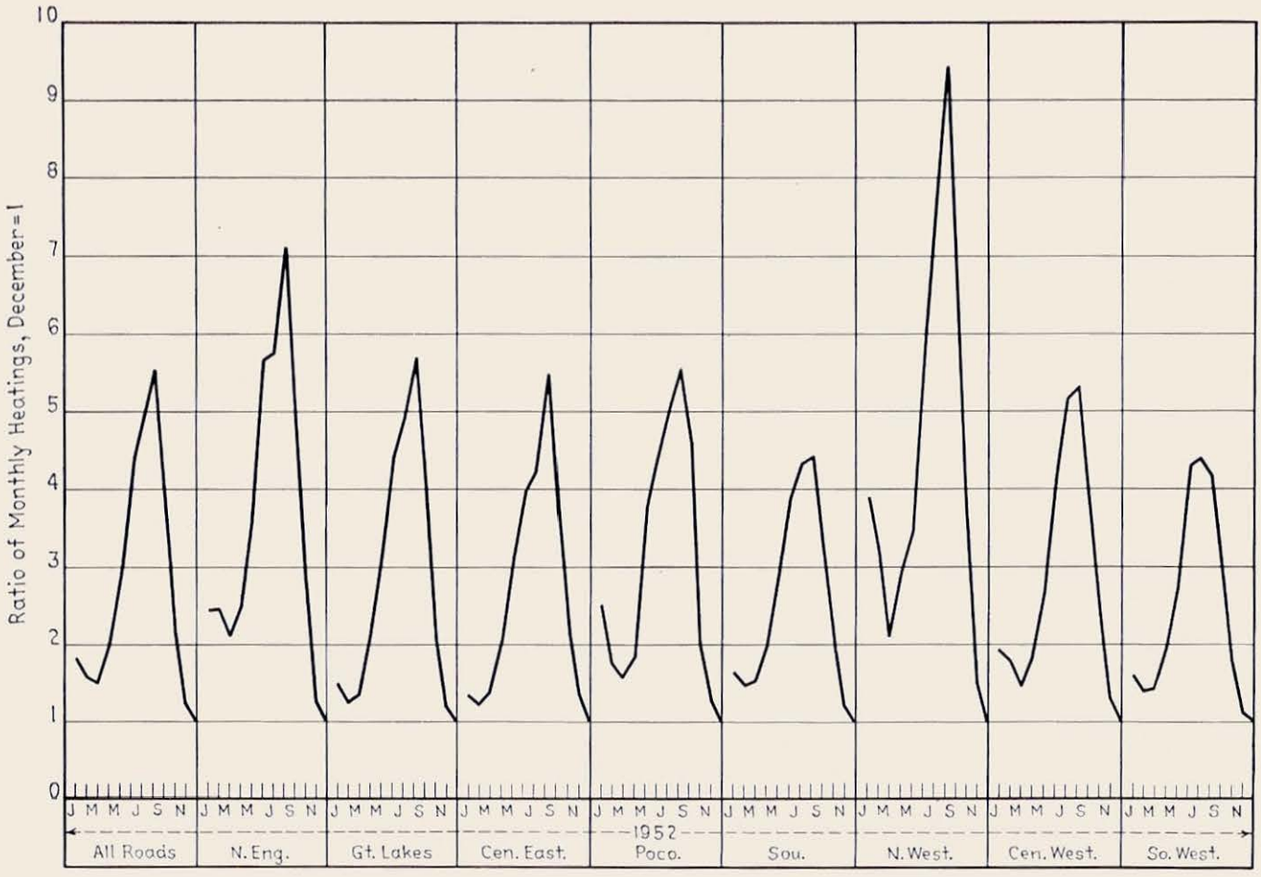


DIESEL SHOP ADDITION to enginehouse features a 25-ton overhead traveling crane and a turntable for use when making truck changes.

NO COLLISIONS between automobiles and diesel units have resulted since the road applied Scotchlite reflective tape to the sides of the locomotives.



REGIONAL monthly ratios of cars set out between terminals on the major railroads, using December as base.



RELATIVE FREQUENCY of plain bearing heatings causing wheel changes on axles 2 and 3 as compared with axles 1 and 4.

that packing in service during April, May, June, July and August—regardless of whether it has been in service one month or twelve months—is in compliance with all the specified quality limits called for in A.A.R. Specification EM-904-50, renovated journal-box oil, and EM-910-50, renovated journal-box packing. The causes for these differences, therefore, were sought elsewhere.

In the attempt to find these causes, a study was made of the factors affecting the stability of the packing in the journal box. Stability is a convenient name for that

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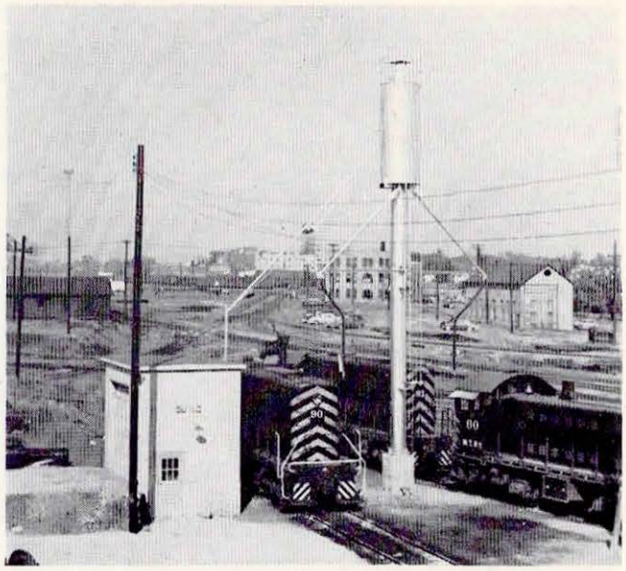

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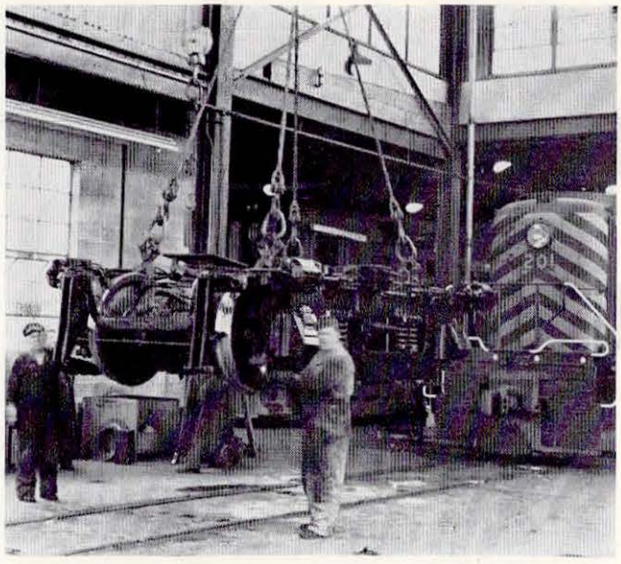

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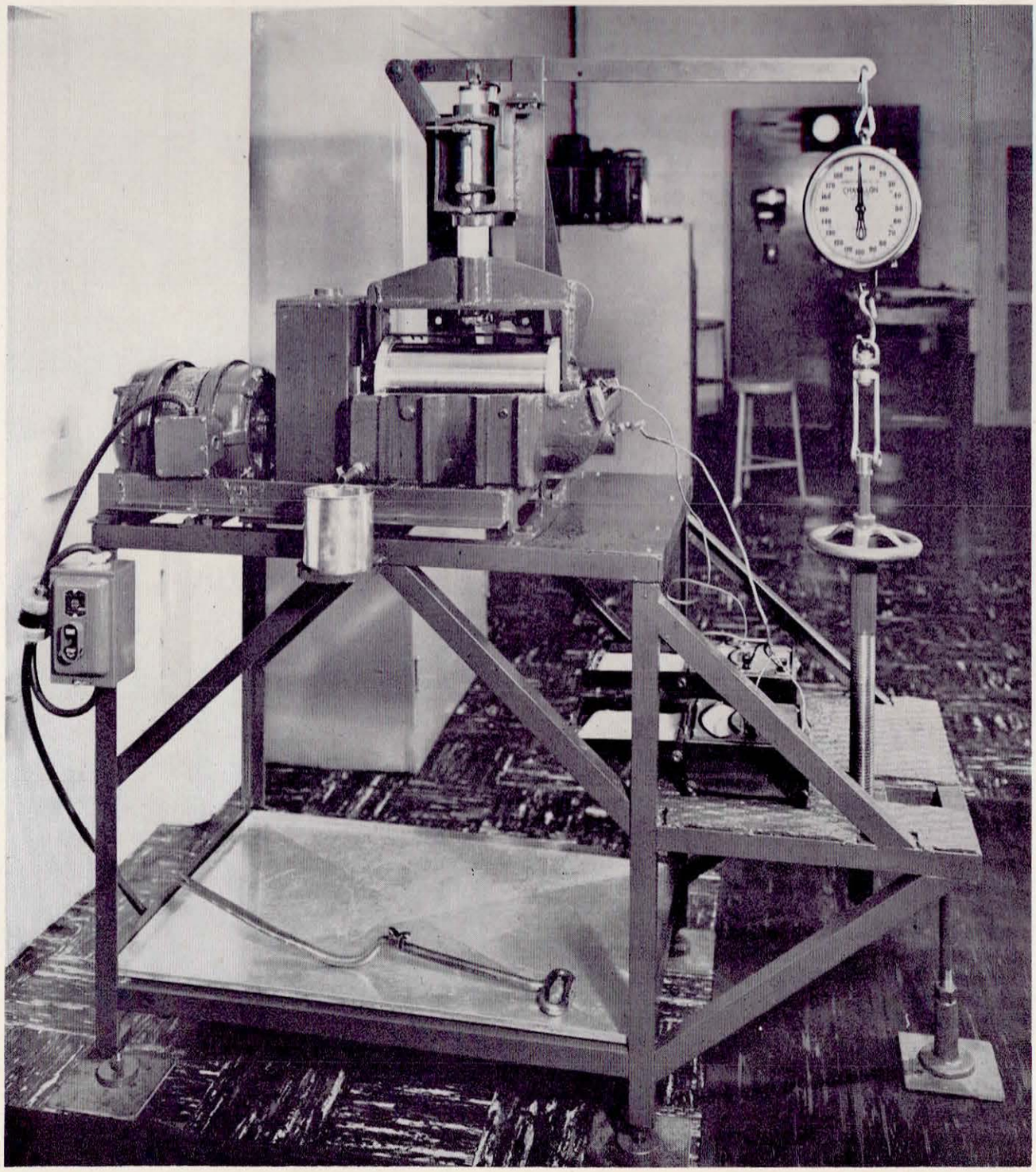
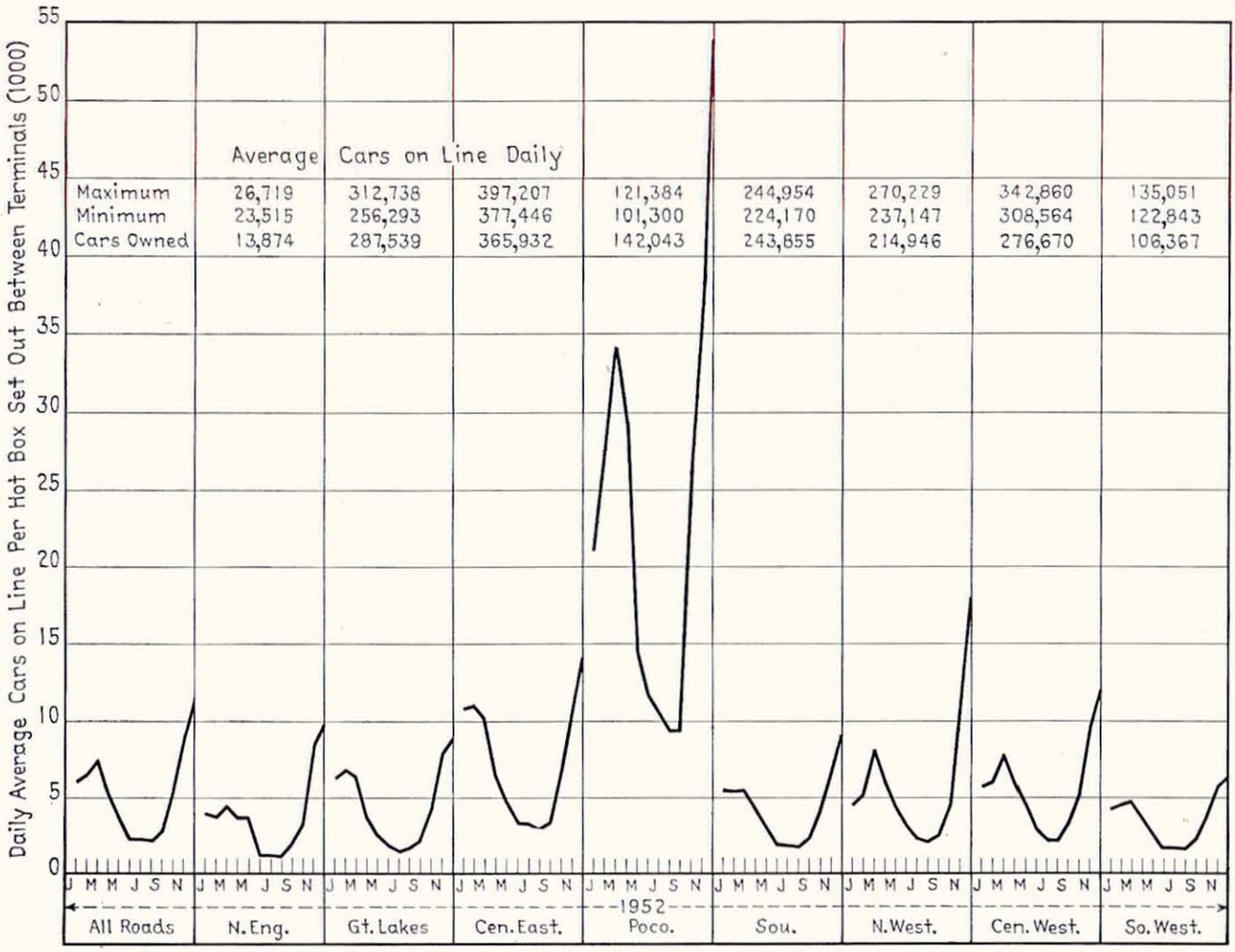


THIS MACHINE HELPS SHOW . . .

Why Hot Boxes Occur as They Do

Tests of resilience of journal-box packing suggest answers to why there are more hot boxes in August than in December; why they occur more frequently on axles 2 and 3 than on 1 and 4



HOT-BOX PERFORMANCE on major railroads, by regions.

- *On all freight cars, including refrigerator cars, hot boxes occur on axles 2 and 3 on the average 1.5 times as frequently as on axles 1 and 2.*
- *Hot boxes on box cars occur 2.3 times as frequently on axles 2 and 3 as on axles 1 and 4. On hopper cars, the frequency is 1.55 times and on gondolas, 1.05 times.*
- *The incidence of hot boxes is greatest in August and least in December.*
- *The ratio of the frequency in August to the frequency in December is highest in the regions where the difference in temperature between the two months is greatest; lowest in the regions where the temperature difference between the two months is least.*

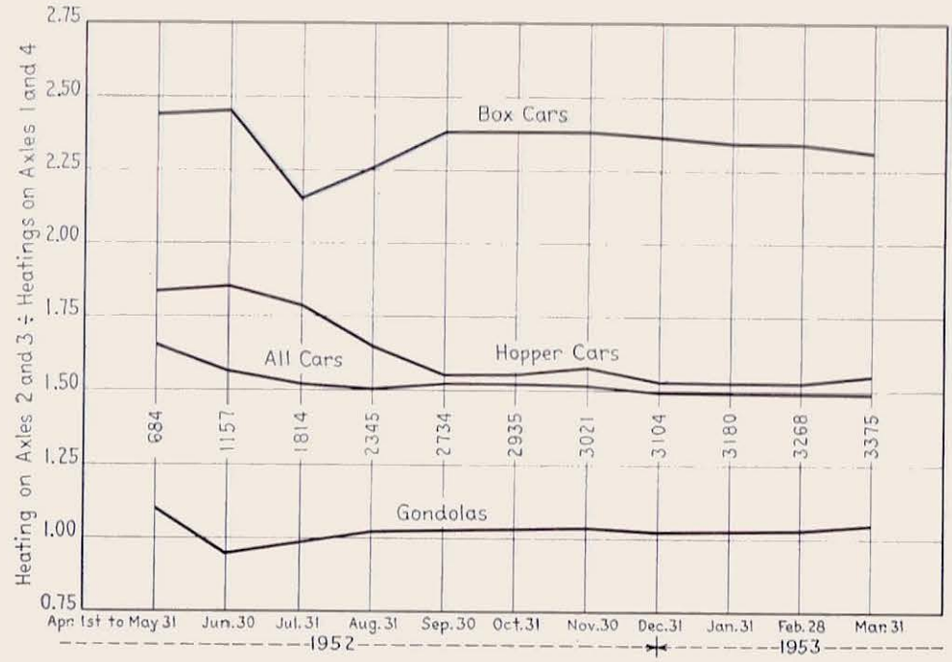
These are the findings of the Railway Service & Supply Co. of Indianapolis, in a study of some 5,000 hot-box case histories on a single large railway and an analysis of the hot-box set-outs reported to the Association of American Railroads by the large Class I railways whose operating statistics are shown on the Interstate Commerce Commission M-200 form.

The case-history study developed the facts with respect to the relative frequency of the occurence of hot boxes causing wheel changes at the various journal locations. The results are shown cumulatively on one of the charts for periods beginning April 1, 1952, and ending progressively up to March 31, 1953. The ratio of frequency of heatings on axles 2 and 3 to frequency of heatings on axles 1 and 4 seemed to bear some direct relation to the distance of the center of mass above the rail.

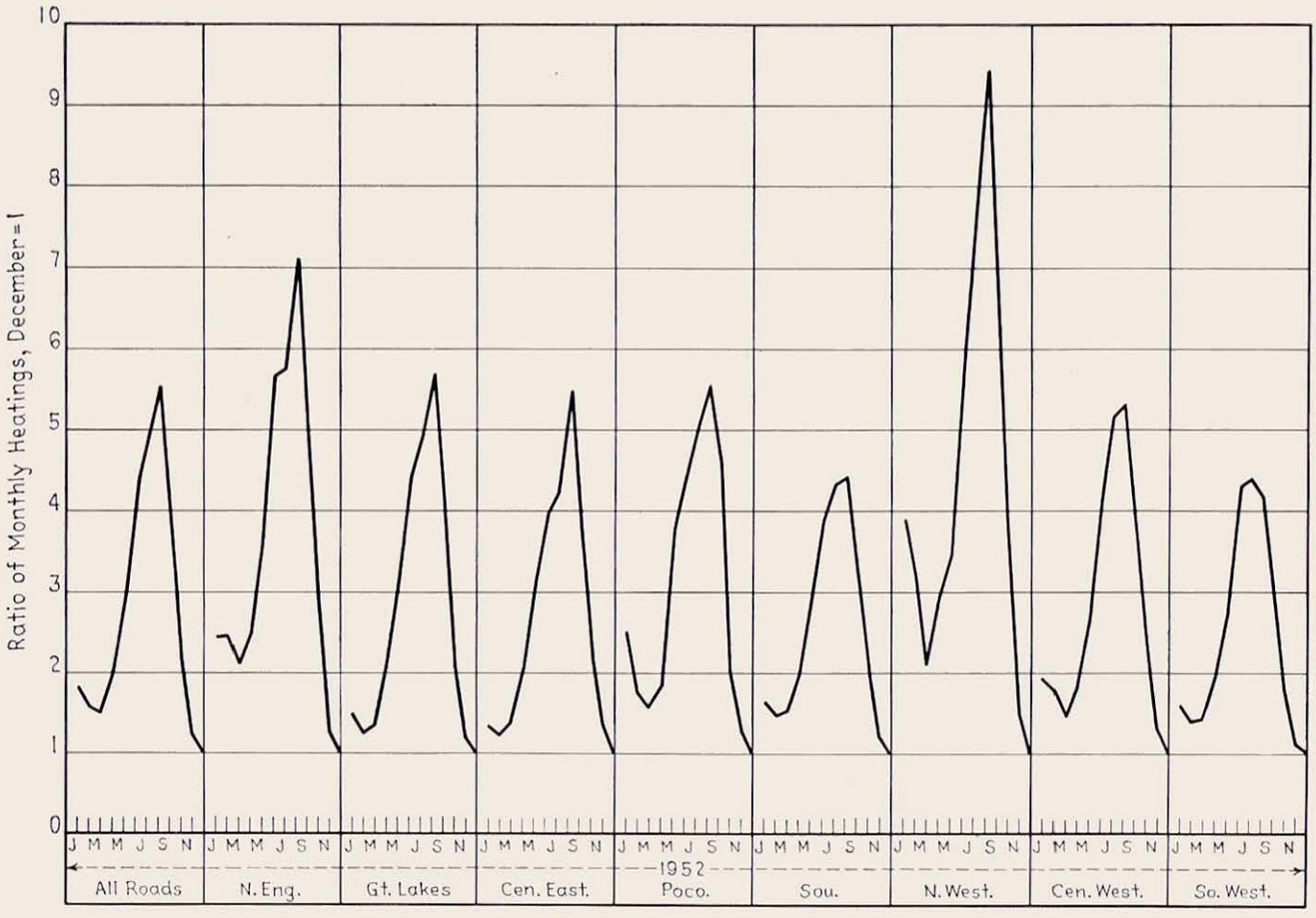
The hot-box performance of the large Class I railroads, grouped by regions, is shown on a chart by months for 1952. In this study the "daily average number of cars on line in movement or subject to movement"* was used as the yardstick against which to measure the incidence of hot boxes rather than car-miles. The ratio of the frequency of occurrence of hot boxes by months to the frequency during December, the lowest month, is shown by regions in another chart. The ratio for the month of highest frequency for each region is presented in a table.

In considering the greater frequency of overheating on axles 2 and 3, it seemed apparent that the operating conditions at the time a heating occurs are the same for all axles as to load, speed, direction of movement, atmospheric temperature, and the kind and quality of the packing in the journal boxes. Considering the difference in the frequencies with which hot boxes occur in different months of the year, the conclusion in A.A.R. Mechanical Division Report No. f 8400 is to the effect

*Cars on line, as reported on I.C.C. Form M-200.



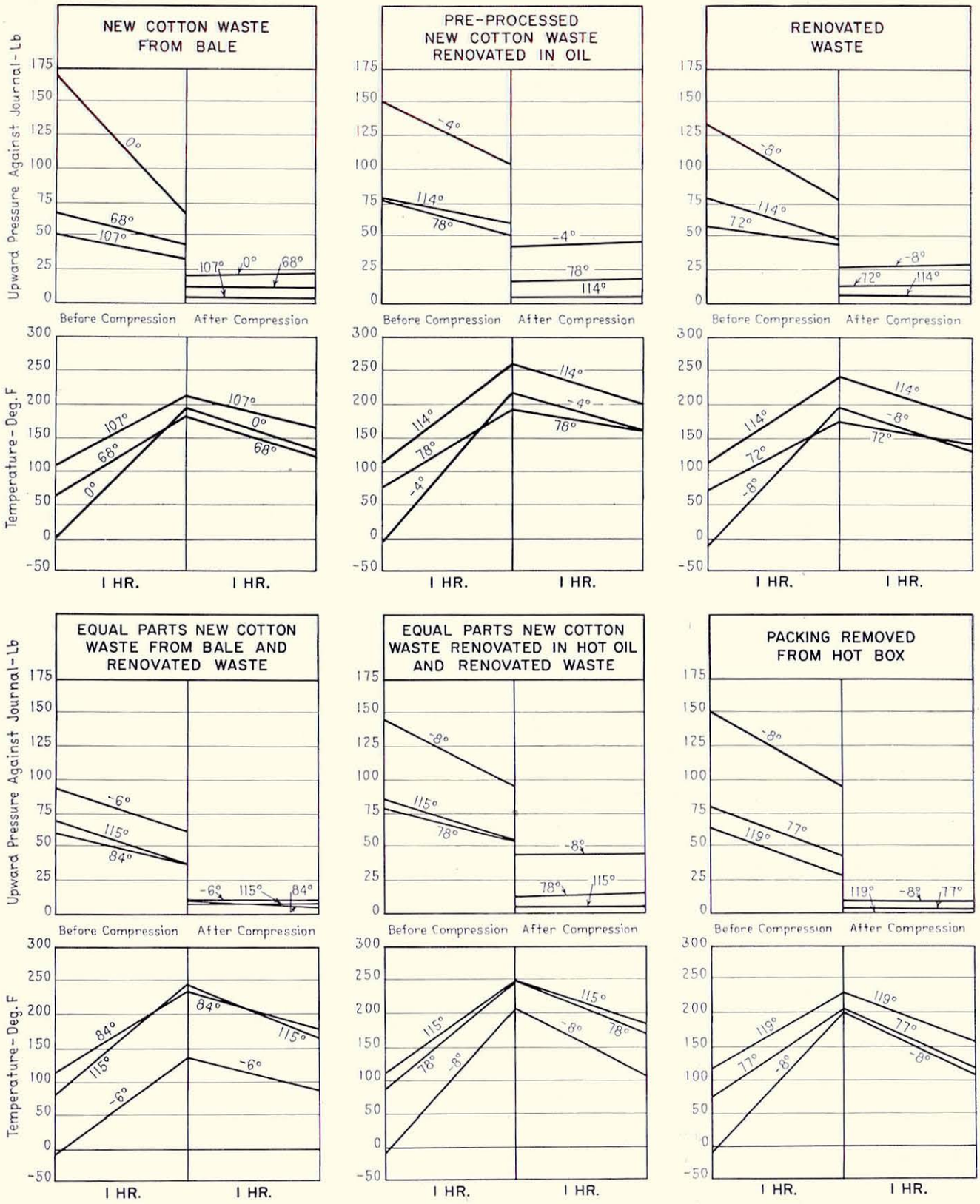
REGIONAL monthly ratios of cars set out between terminals on the major railroads, using December as base.



RELATIVE FREQUENCY of plain bearing heatings causing wheel changes on axles 2 and 3 as compared with axles 1 and 4.

that packing in service during April, May, June, July and August—regardless of whether it has been in service one month or twelve months—is in compliance with all the specified quality limits called for in A.A.R. Specification EM-904-50, renovated journal-box oil, and EM-910-50, renovated journal-box packing. The causes for these differences, therefore, were sought elsewhere.

In the attempt to find these causes, a study was made of the factors affecting the stability of the packing in the journal box. Stability is a convenient name for that


NEW COTTON WASTE FROM BALE
PRE-PROCESSED NEW COTTON WASTE RENOVATED IN OIL
RENOVATED WASTE
EQUAL PARTS NEW COTTON WASTE FROM BALE AND RENOVATED WASTE
EQUAL PARTS NEW COTTON WASTE RENOVATED IN HOT OIL AND RENOVATED WASTE
PACKING REMOVED FROM HOT BOX
Upward Pressure Against Journal-Lb
Temperature-Deg. F
Before Compression
After Compression
1 HR.

PRESSURE AND TEMPERATURE MEASUREMENTS in resilience tests of six samples of journal-box packing.

property of journal-box packing which keeps the packing in effective contact with the under side of the journal.

The distance from the bottom of the box to the bottom of the journal in a 5½-in. by 10-in. journal box varies from 2-15/16 in. with all parts nominal to 3-5/16 in. with the part dimensions at shop limits. Furthermore, the bottom of the box can rise toward the journal during braking or road or switching impacts until the bottom of the dust-guard opening contacts the bottom of the dust-guard seat on the axle. This reduces the

RATIOS OF HOT-BOX FREQUENCIES, AUGUST TO DECEMBER, BY REGIONS

Region	Ratio
Southern	4.4
South Western	4.4
Central Western	5.3
Pocahontas	5.5
Central Eastern	5.5
Great Lakes	5.7
New England	7.1
North Western	9.5

nominal distance from the bottom of the journal box to the bottom of the journal from 2-15/16 in. to 2¼ in. and the shop-limit distance from 3-5/16 in. to 2-7/16 in. This amounts in the first instance to a compression of the packing by 33 per cent and, in the second, by 25 per cent. It raised the question as to the effect of such compressions of the packing on its subsequent stability.

A machine was designed and built specifically for the study of the stability of journal-box packing. This unit embodies a conventional 5½-in. by 10-in. journal box and journal, without the wedge or bearing. Provision was made for operating the journal continuously at 50 m.p.h., simultaneously measuring pressure of the packing against the journal and the temperature of the journal produced by the pressure contact with the packing. The machine was arranged so that the bottom of the box and the journal could be quickly brought closer together up to the limit permitted by the dust-guard opening in the journal box, thus producing the maximum compression of the packing. The tests were carried on under controlled conditions of atmospheric temperature.

Graphs show what happened in a series of tests which included six packing combinations, each tested at three atmospheric temperatures. The pressures of the packing against the journal and the resulting temperatures of the journal were recorded at the beginning of each test and at the end of one hour of operation at 50 m.p.h. The packing was then compressed, the relative position of the box and journal restored to normal, and the journal run at a speed of 50 m.p.h. for another hour. Pressures of the packing against the journal and journal temperatures were recorded at the beginning and end of this period.

The results of these tests are shown on six graphs, one for each packing sample tested. All of the samples, except that removed from a hot box and reapplied as received, were far within the limits of quality requirements of the A.A.R. specifications. The packing from the hot box was of marginal quality. It had been removed from a left No. 2 box in June 1953.

As shown in the graphs, the temperatures of the journal after the first hour's running at 50 m.p.h. are relatively independent of the atmospheric temperatures and as the journal temperature rises, the pressure of the packing against the journal goes down, irrespective of the temperature of the atmosphere. It was observed also that, contrary to generally accepted beliefs, the packing suffers the least loss of resiliency at the lowest atmospheric temperature and the greatest at the highest temperature.

The results of these tests suggested a reason for the seasonal variations in the incidence of hot boxes. Because packing stability is low when atmospheric temperatures are high and high when atmospheric temperatures are low, overheating of journals from failure of the packing effectively to deliver oil to the journals is more frequent during the hot months than during the cold months. The variations between regions in the ratio of the frequency of overheating in August to that in December is indicative of a difference in packing stability which, in turn, is roughly inversely proportional to the relative increases in temperature between December and August in the various regions.

Conclusions

Since the physical conditions in the journal boxes and the general conditions within which the car operates are no different for journal boxes on axles 2 and 3 than on axles 1 and 4, it was concluded that there must be differences in the forces acting on the journal boxes, reducing the stability of the packing in those of the two inner axles below that of the packing in the journal boxes of the two outer axles.

Based on the facts established by this investigation and the inferences drawn from them, E. S. Pearce, president of Railway Service & Supply Co., suggests four steps for reducing hot boxes:

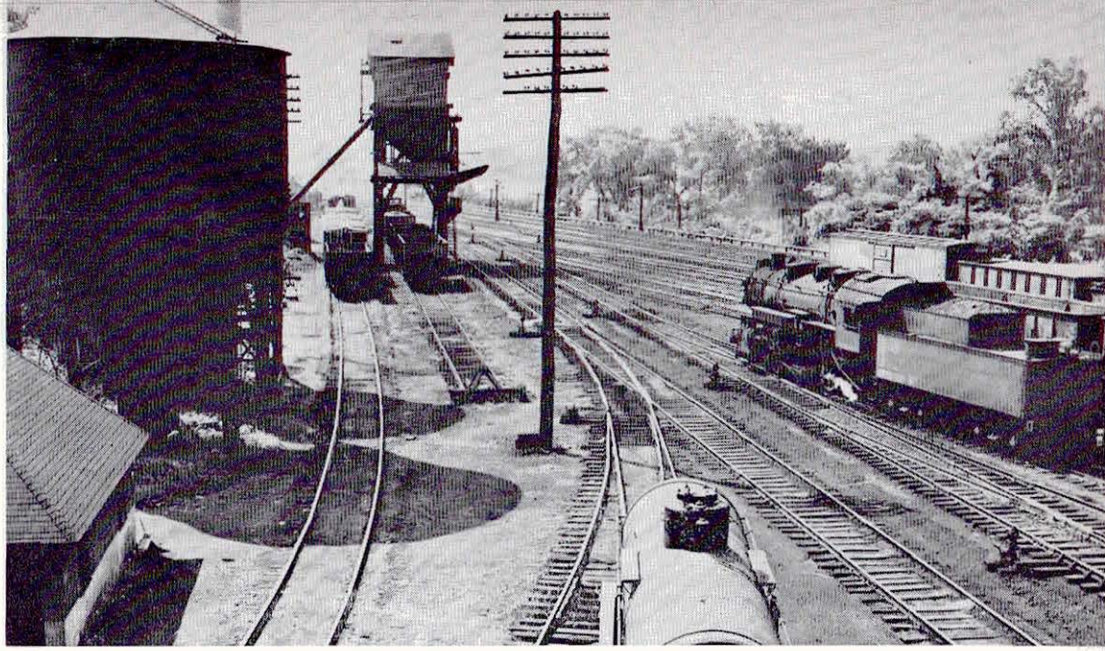
1. In "setting up" packing, preferred attention should be given to the boxes on axles 2 and 3. This will, in effect, temporarily restore the balance of stability.

2. Packing from new cotton waste as received has less stability than packing from used renovated cotton waste. When these two are put together, the resulting packing has lower stability than renovated packing alone. However, when packing is made from new waste that has been renovated, it compares favorably with packing from used renovated waste. New waste, therefore, should be renovated before it is used.

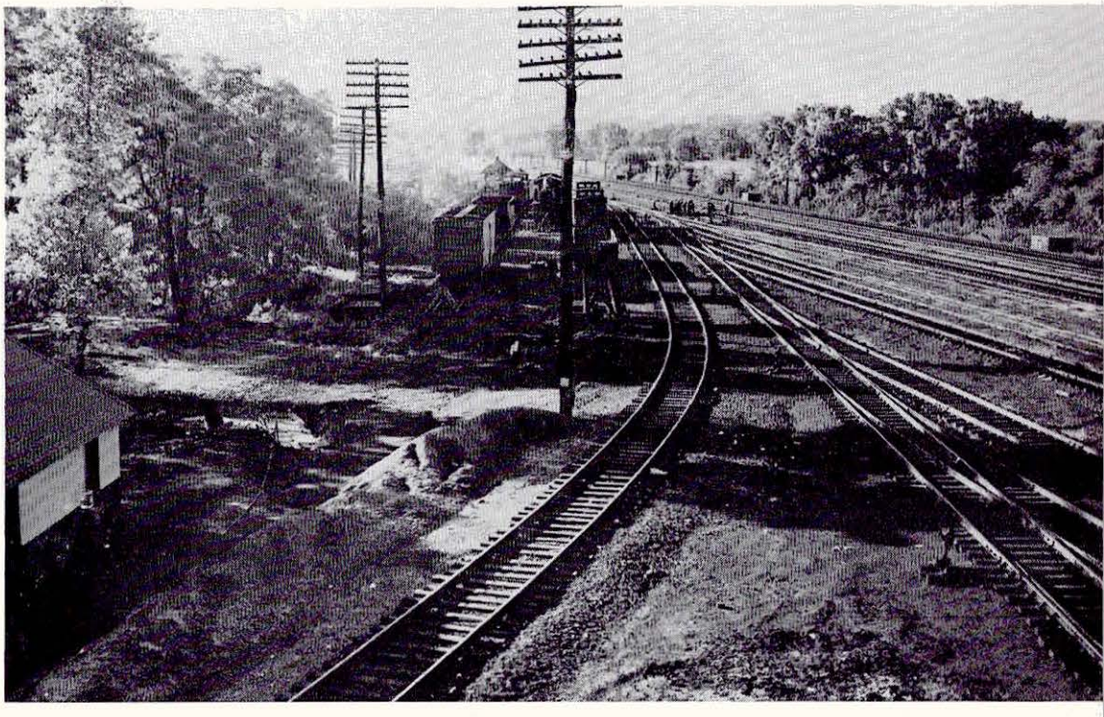
3. The stability factor should be recognized in the A.A.R. specifications. Provisions for this purpose should cover not only packing from new waste, but that from renovated waste and that from new and renovated waste combined in various ratios. One of the basic purposes of a proper process of renovation and preparation is to impart or restore stability to journal-box packing.

4. Since stability is adversely affected by long service, repacking box and hopper cars on a 12-months' instead of the present 15-months' basis would prove beneficial. Initially, this might be made still more selective by repacking the boxes of axles 2 and 3 only on a 12-months' basis.

"The above remedial steps are within the practical limits of railroad operation and economy," concluded Mr. Pearce. "They are not controversial, as the facts support the conclusions. They have every logical possibility of equalizing the performance of August with that of December and of journals on axles 2 and 3 with those of 1 and 4; and consequently raising and equalizing the hot-box performance of all regions, when, and if, they are applied on that basis. These four steps can be carried out with what is already available, can be done by all car owners, and can be made progressively effective possibly in a period of 12 to 18 months, on a country-wide basis."



BEFORE: Steam facilities necessary 15 years ago water tank, coal chute and coal cars, with extra track for storage of company coal cars.



AFTER: Photograph taken from the same place as the one above, after diesels had replaced steam locomotives and coal chute, water tank and storage tracks had been removed.

BETTER LOCOMOTIVE UTILIZATION . . .

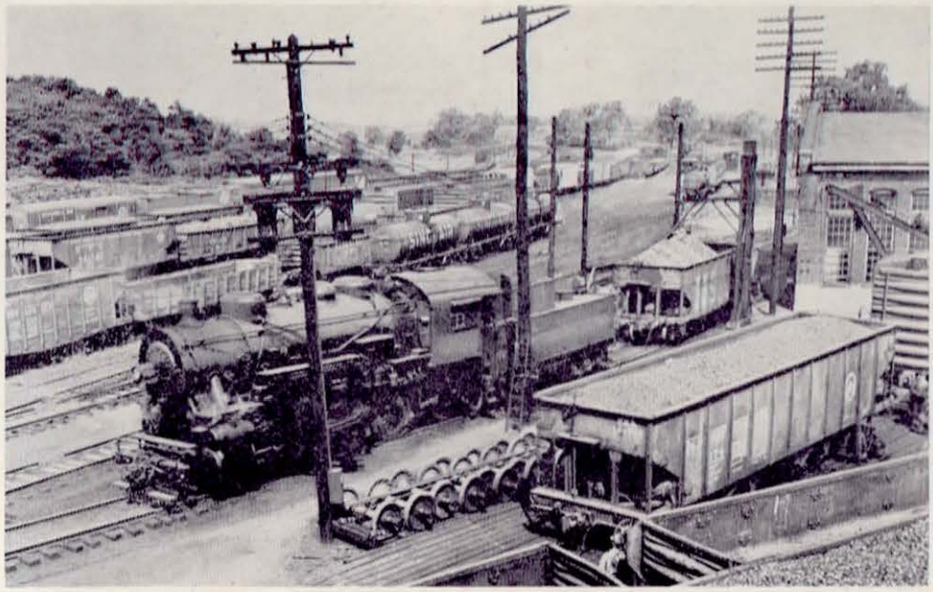
How "Cycling" Diesels Pays

Railroads having many short runs can now make higher mileage records than were possible 15 years ago on the best operated and selected steam runs

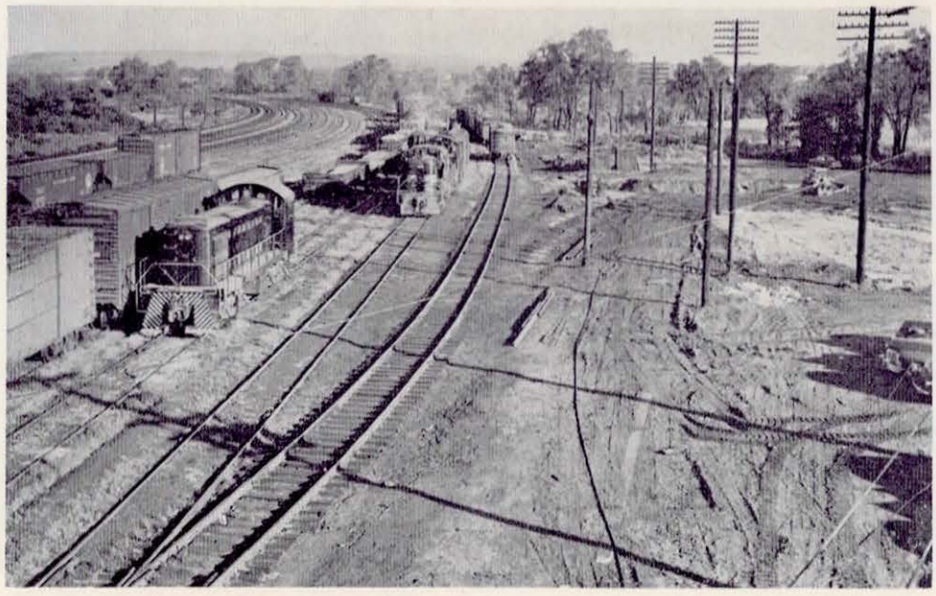
By G. T. BEVAN
Manager, Locomotive Application Division
General Electric Company

The inherent electric drive characteristics of the diesel-electric locomotive plus the constant horsepower available over a wide speed range when a diesel engine is combined with a traction generator, have resulted in an entirely new approach to motive power dispatchment. In many instances the result has been to double the daily, monthly, and yearly mileages of diesel-electrics over steam. Higher gross ton-miles per train hour and greater locomotive mileages have meant fewer units and tremendous savings in operating costs.

Not only do 50 per cent of all operating costs revolve around maintenance and utilization of locomotives, but



BEFORE: Roundhouse, ash handling equipment, turntable and storage tracks required before dieselization..



AFTER: The same location shown above, after dieselization. Roundhouse, turntable and ash handling equipment are no longer required.

the character of the motive power determines, to a large degree, the necessary ownership of rolling stock, tracks, yards and terminals. In fact, the entire economic life of the railroad industry is dependent upon the *number* and *type* of motive power units used in conducting transportation.

The operating savings from the use of diesel-electrics were so attractive in the early stages of dieselization that not much effort was required to obtain relatively high utilization of motive power. Practically any 24-hour assignment would reveal an economic advantage over steam.

Pools in Practice

However, as the dieselization trend continued it became somewhat less attractive from both the utilization and economic standpoints because of not having full 24-hour assignments. Ways and means of greater usage became quite apparent if the diesel-electric were to continue as a new motive power tool and completely replace the steamer.

Experience gained through the use of road switcher diesel-electric units indicates that greater utilization can be obtained by operating a pool of this type power for all classes of service. Formerly, several types of diesel-electric motive power (i.e.—switcher, road freight, road passenger and later the road switcher) were needed to perform different services. For an example, in one instance it has been observed that a single 1,600-hp. road switcher could replace a 1,000-hp. unit in switching service and a 1,500-hp. road freight unit in branch-line service simply by pooling the assignments and planning a cycle operation with the thought of doing all possible jobs with the minimum of motive power investment and equipment.

The diesel-electric locomotive has potential capabilities

(*Continued on page 116*)

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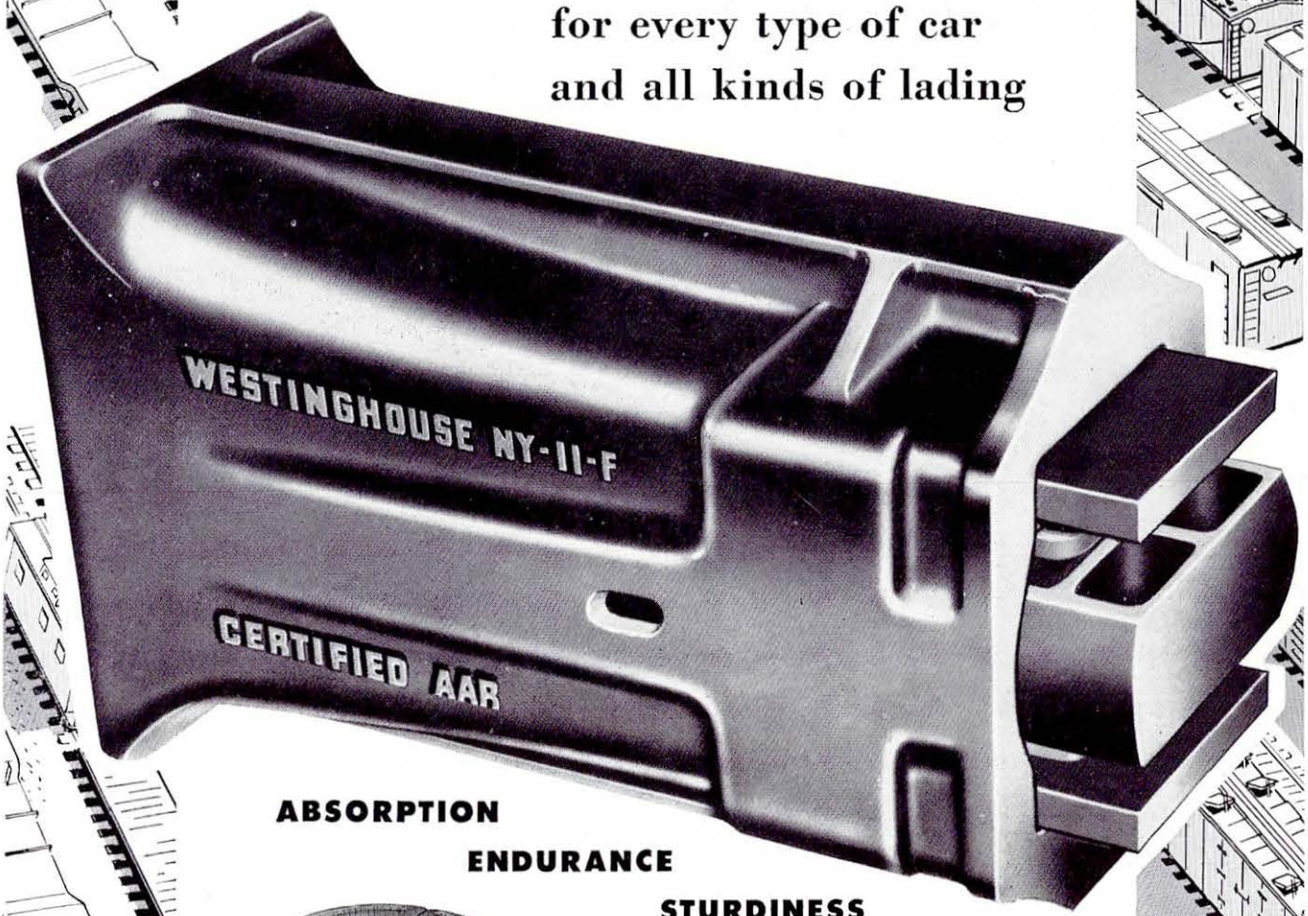

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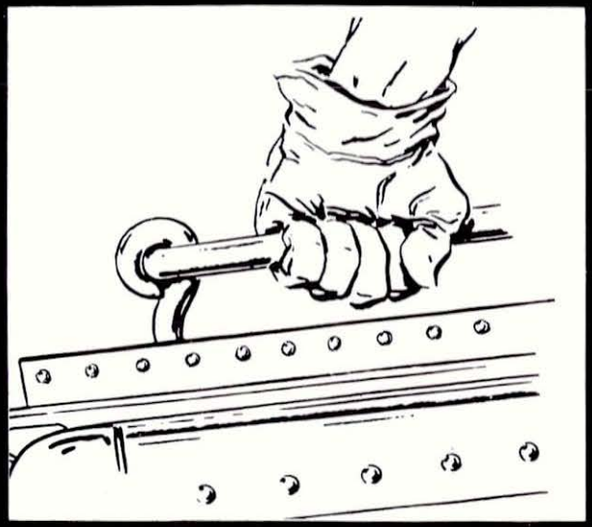

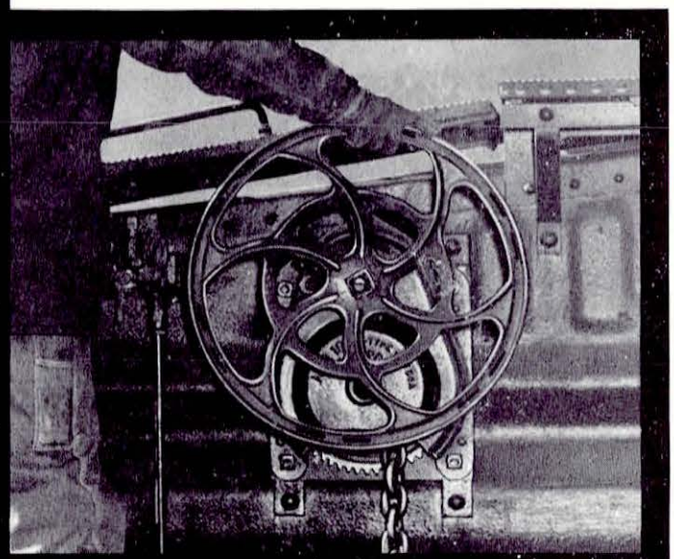

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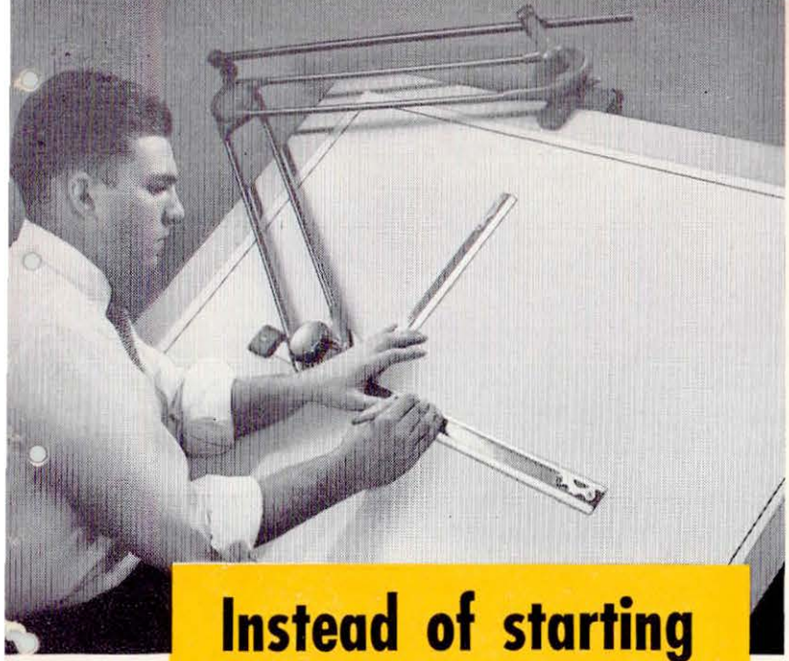
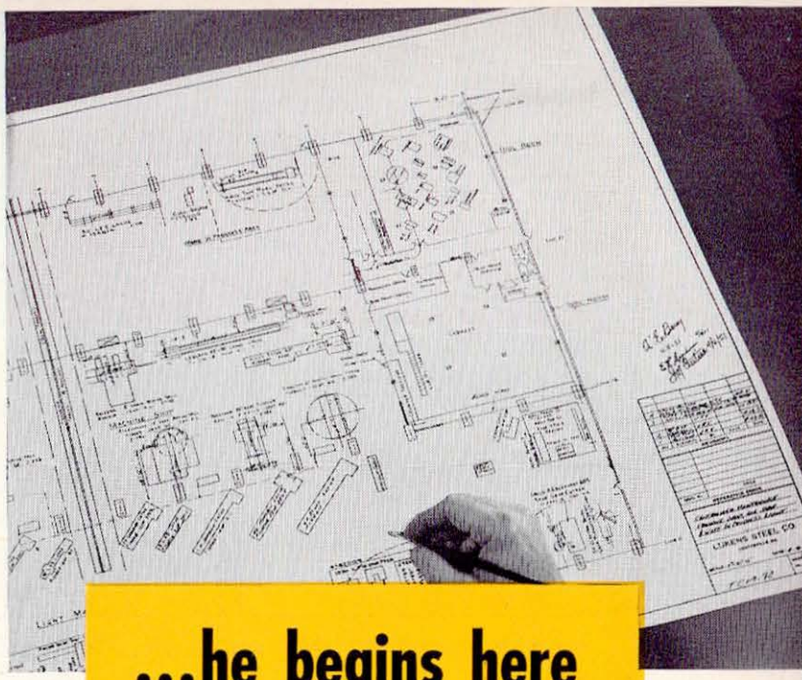


Instead of starting all over again



...he begins here

Here's how the Lukens Steel Company, Coatesville, Pa., uses Kodagraph Autopositive Paper to eliminate retracing in preparing flow diagrams and piping layouts.

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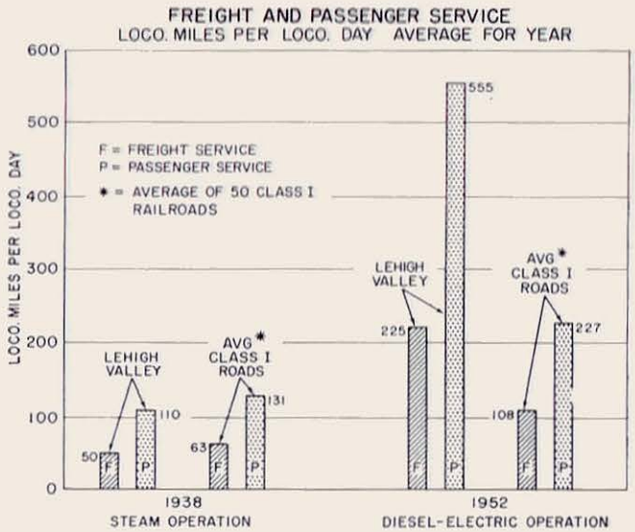
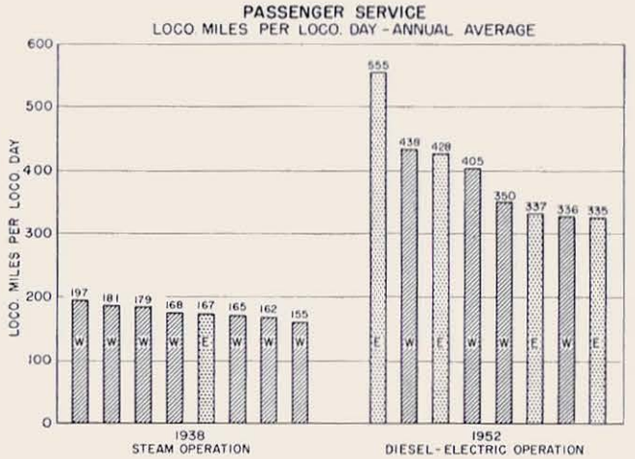
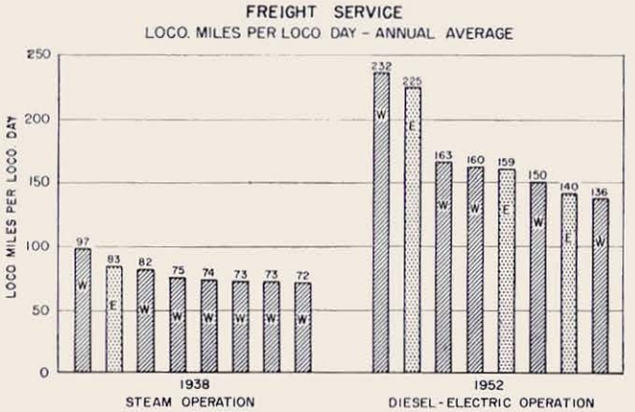


COMPARISON of locomotive-miles per day for 1938 and 1952, for 50 large Class I railroads, compared to the Lehigh Valley.



COMPARISON of locomotive-miles per day in passenger-train service, as compiled by the Bureau of Transport Economics and Statistics—I.C.C. Statement No. M-200, charting the first eight railroads with the highest mileage for the two annual periods—1938 and 1952 (W—western road. E—eastern road).



COMPARISON of locomotive-miles per day in freight-train service, as compiled by the Bureau of Transport Economics and Statistics—I.C.C. Statement No. M-200, charting the first eight railroads with the highest mileage for the two annual periods 1938 and 1952.

(Continued from page 110)

that perhaps are not being fully evaluated or fully exploited in terms of productivity and earning capacity. Yard and terminal facilities, track capacities and methods of train dispatchment formerly used with steam motive power should be analyzed to prove their merits with diesel-electric operation. In many instances the division terminals and territories set up for steam locomotive operation are still being used with diesels. Hauling capacity and tonnage handling ability of the diesel-electric have been limited by boundaries set up for steamers. As long as this new equipment is applied in the methods formerly employed with steam locomotives, its latent capability cannot be fully realized.

On several eastern carriers, similar locomotives in pool service are assigned in services where one unit covers twice the mileage per trip yet receives the same attention as another unit covering half the mileage in a single trip. As a result, the diesel-electric operation is somewhat burdened, showing a low mileage with a consequent lower earning performance. In spite of this handicap, the diesel has improved the everyday performance over the steamer by an amazing degree, as illustrated by many railroads over the past few years. Yet potentially it could do a much better job if not burdened, in effect, by steam regulations.

Division Limits Forgotten

No longer are diesel-electrics confined to single operating division territories as was the case of the steamer. Today they are quite frequently operating on a system pool basis, handling everything from switcher assignments to main-line trains. Pooling and cycling of motive power has resulted in a new concept of locomotive maintenance—centralized repair and inspection service. In many instances, former steam enginehouses and associated facilities are not necessary with diesel-electrics.

On an eastern railroad, for example, the elimination of out-lying enginehouses and associated facilities has not only produced substantial savings in labor, but has also reduced the real estate assessment valuation appreciatively. At one location the assessment was reduced $150,000 by the abandonment of these facilities.

The reduction in facilities has lessened the burden of fixed charges relating to valuation. This has been made possible by properly utilizing road switcher power and cycling the equipment to a common maintenance point for repair and inspection on a routine schedule set up by the operating department. Here five diesel-electrics replaced seven steam switchers and three men replaced 25 men. This has made a tremendous saving in locomotive repairs, as well as other savings such as inventory of spare parts.

Many railroads are using train movement charts to improve the utilization of diesel-electric motive power. In the Southeast, a large Class I carrier has been operating diesel-electric motive power on a system pool dispatchment. The locomotives are all placed in a common pool and cycled from day to day on routine assignments. This not only equalizes the mileage but also permits scheduling of each unit into a common maintenance terminal for inspection and repair work.

The advantage of having all units of a general purpose

type allows the units at outlying terminals to be cycled into the centralized maintenance terminal for weekly, monthly and annual inspections. This type of operation, therefore, permits the abandonment of many outlying maintenance facilities which were required with steam operation. The steam switcher, due to its inherent design, could not be worked in revenue symbol road freight service back to the central maintenance point with the ease and flexibility of the road switcher diesel-electric.

Some of the savings in motive power made possible by diesel-electrics—and the new concept of maintenance and utilization that can be applied to them—seem almost incredible. On another eastern carrier operating 1,500 miles of track which is now 100 per cent dieselized with 1,600-hp. road switchers, a cycle and system pool operation has permitted the abandonment of 12 steam enginehouses. All of the diesel-electric maintenance is performed at just two points selected so that units spend a minimum time traveling to and from the shop. These road switchers handle all types of service—yard work, symbol freight trains, even main-line passenger trains.

This practice has resulted in a reduction of locomotive repair cost on this particular railroad of from 26.5 cents to 15.2 cents per unit mile. Furthermore, the unit locomotive-miles per day increased from 70 to 125. Higher utilization due to cycle and pool operation of motive power plus centralized maintenance has likewise affected the general operation by raising the gross ton-miles per train-hour to 67,000 from a previous 54,000. In addition, the effect of centralized maintenance and pooling of diesel motive power has reduced the mechanical maintenance staff approximately 60 per cent, with a consequent reduction in operating expenses.

Attaining Maximum Mileage

By carefully selecting and scheduling motive power for the job at hand, it is possible to hold the diesel investment to a minimum, thereby increasing the attractiveness of the return. Pooling of power and scheduling assignments so as to insure maximum mileage of locomotives with a minimum number of units has resulted in a 43 per cent reduction in the operating costs on a New England railroad. Fifteen 1,600-hp. road switchers are now doing the work formerly performed by 50 steamers—and full application of utilization principles has been undertaken.

The application of this type of diesel-electric power has cut more than two hours from the running time on through-freight trains and eliminated helper service. This has increased locomotive utilization by approximately 100 per cent. A new concept of terminal layovers has been made possible by the use of diesels so that ten-minute turnaround time is now almost standard practice.

Utilization of locomotives is a phase of railroading that is now being recognized as a major component of economical operation. The high availability of the diesel-electric has permitted utilization that was not practical with even modern steam locomotives.

High locomotive utilization is not necessarily associated with large long-haul transcontinental carriers. In fact, many short haul railroads have done an outstanding job in this respect by, in some cases, operating motive power on a daily basis over five times the miles run by steam.

A graph shows the Lehigh Valley's miles per locomotive-day versus the average of 50 Class I railroads as compiled by the Bureau of Transport Economics and Statistics for two annual periods: 1938, with LV steam operation; and 1952, with diesel-electric operation. The Lehigh Valley was below the average of these 50 railroads with respect to both passenger and freight operation covering locomotive-miles per locomotive-day during 1938 with steam operation. Taking full advantage of 100 per cent dieselization, the Lehigh Valley used the potential capabilities of this new type power to such an extent that the average locomotive-miles per locomotive-day in 1952 were twice the average of all Class I carriers. This includes both freight and passenger service.

Effect on Maintenance Cost

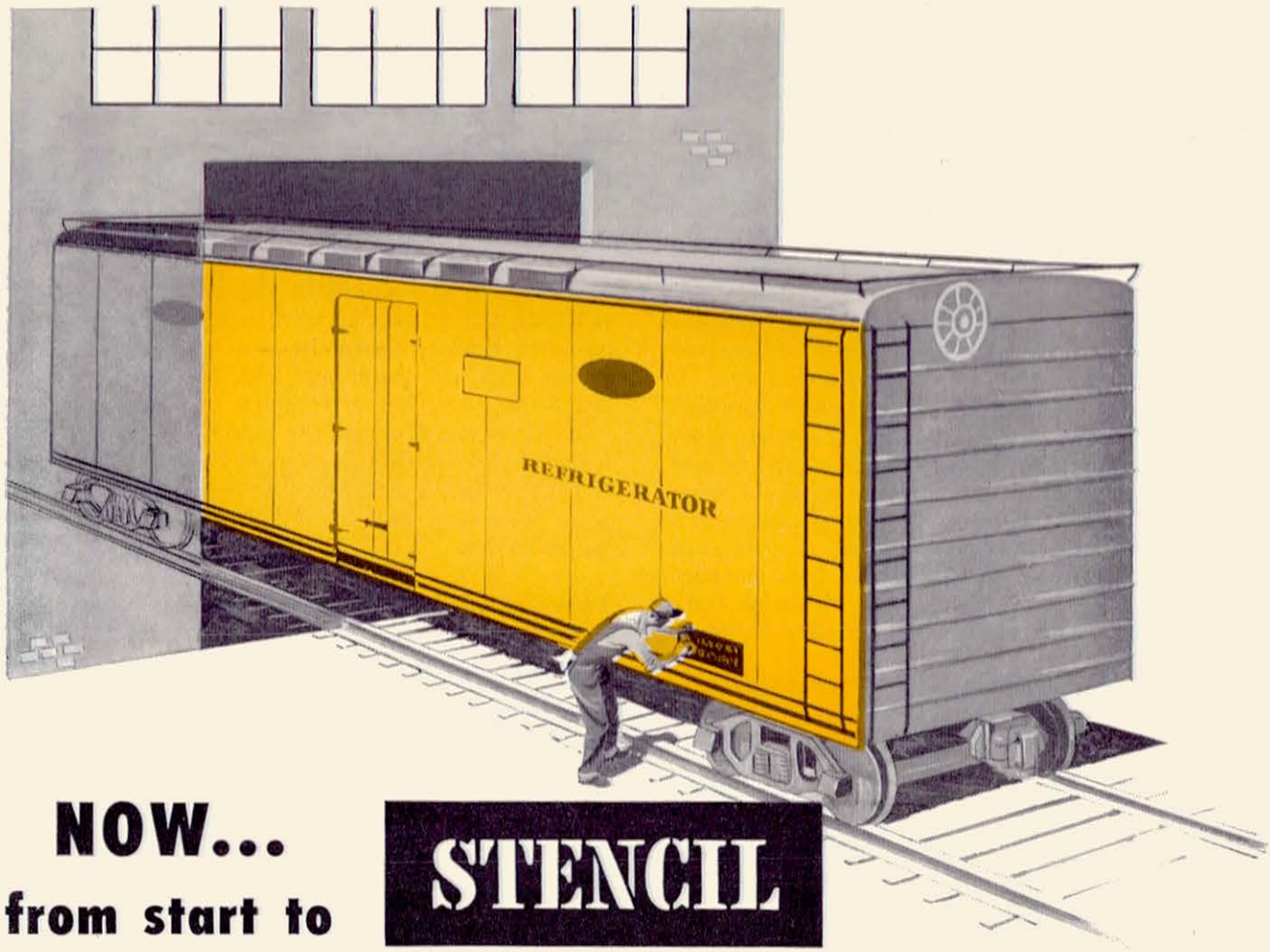
A study of the locomotive mileage record of the leading Class I carriers, as compiled by the Bureau of Transportation Economics and Statistics, reveals that roads which formerly had low steam locomotive mileages, perhaps due to a certain degree to the physical layout of the property, are now able to run diesel-electrics with even higher mileage records than that made possible fifteen years ago on the best operated and selected steam runs. Graphs illustrate the 1952 records of eight leading carriers as compared to 1938 for both passenger and freight service.

In many instances the high hourly maintenance cost of locomotive repairs can be attributed to poor utilization of motive power. This is one tool that can be effectively applied to reduce hourly maintenance costs. Where this is the case, utilization may be improved by readjusting operating schedules and practices that are often carry-overs from steam operating days. Already many smaller railroads in the Class I category have done the seemingly impossible by utilizing motive power beyond the best expectations. This, of course, has paid off handsomely in increased earnings.

Close Interdepartmental Relationship

However, one of the major requisites of good motive power utilization is a close relationship between mechanical and transportation departments. With such a tie-in the ultimate in locomotive mileage can be brought about by (1) the purchase of more road switcher type units; (2) cycling of power for shopping; (3) assignment of power on a pool basis; (4) using diesel-electrics in work train service to a minimum degree (make more use of off-track work equipment); and (5) scheduling a cycle operation not only to equalize mileage on all units, but to eliminate as much as possible the need for enginehouses at outlying terminal points.

Thus when applied to a greater degree the locomotive utilization tool can, in many instances, be made to bring out the potential capabilities of the diesel-electric, with the accompanying rewards of greater operating profits and improved earnings.



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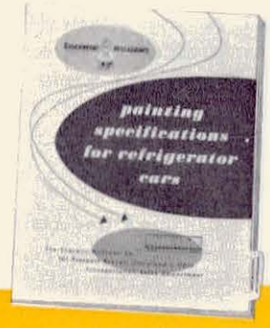


NEW BOOK TELLS HOW:

A choice of two finishing systems . . . FAST-DRI and FLASH-DRI® . . . is described in detail in this new Sherwin-Williams brochure, "Painting Specifications for Refrigerator Cars". Ask or write for copy without obligation.

SHERWIN-WILLIAMS

RAILWAY FINISHES

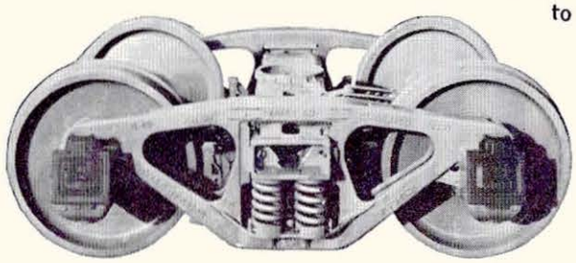
COVER THE EARTH

HOLLAND A-7-A
UNIT SNUBBER
50-TON 4-SPRING GROUP

NEW HOLLAND RS-1 *Ride Stabilizer* UNIT FOR EXISTING EQUIPMENT

HERE'S a high efficiency Friction Snubbing device for application to existing freight car trucks, which is different from all others. Use it with either standard A.A.R. 1915 or 1936 (1⅝" travel) coil springs or new A.A.R. long travel coil springs.

It is applied in present Freight Car Truck Bolsters not equipped with built-in snubbing, and makes them comparable in performance to your new cars equipped with built-in ride stabilization.



Modern High Speed Freight Car Truck
with built-in Ride Stabilizer

Write for Bulletin #16 for complete technical details on the above Ride Stabilizer Unit *(RS-1) for existing equipment.*

311R

HOLLAND COMPANY
332 South Michigan Avenue • Chicago 4, Illinois

(*Continued from page* 18)
Lighting Co., Chicago; senior vice-president, A. E. Ganzert, Mars Signal Light Company, Chicago; junior vice-president, F. W. Wocher, Chicago, Railroad Supply Company; and secretary-treasurer, John McC. Price, Allen-Bradley Company, Chicago.

Equipment & Supplies

Procurement Pamphlets Issued by Defense Dept.

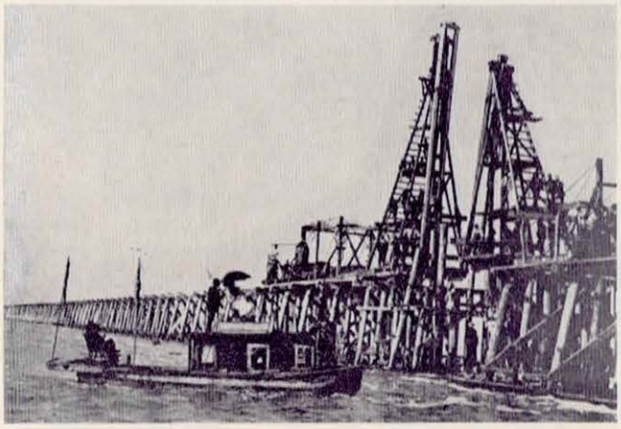
The Department of Defense has published two new pamphlets designed to aid manufacturers and other suppliers sell their products to the department. The pamphlets list, for the first time in a single official publication, all major procurement and contracting offices of the Army, Navy and Marine Corps, and Air Force, as well as joint military procurement agencies. Manufacturers and suppliers may obtain the pamphlets on a pickup basis, or on postcard request to any purchasing office of the department.

LOCOMOTIVES

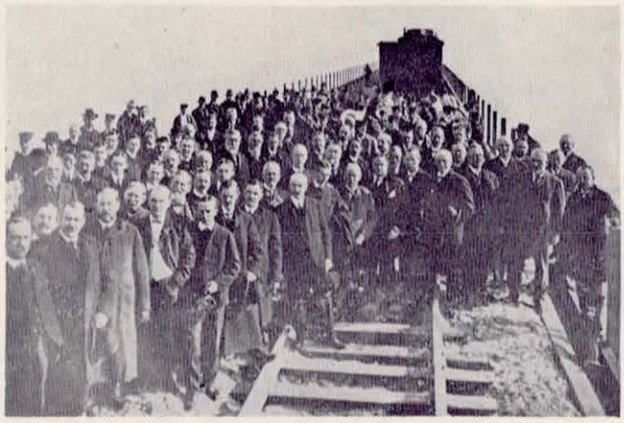
The **Great Northern** has ordered 37 diesel units from the Electro-Motive Division of General Motors Corporation at a cost of about $6,356,600. The order includes 25 1,750-hp. road-switchers to be delivered during March, April and May 1954; six 1,750-hp road-switchers to be delivered next February; and six 1,750-hp., "B" road freight units—also for February 1954 delivery. Board authority to place this order was reported in the October 26 *Railway Age*, page 36.

The **Virginian** has ordered 25 diesel units from Fairbanks, Morse & Co. at an estimated cost of $5 million. The order includes 19 2,400-hp "Trainmaster" all-purpose units and six 1,600-hp. road-switchers. Inquiry for these units was reported in the November 23 *Railway Age*, page 15. All will be assigned to coal mine territory and other heavy transportation work at, and west of, Elmore, W. Va.

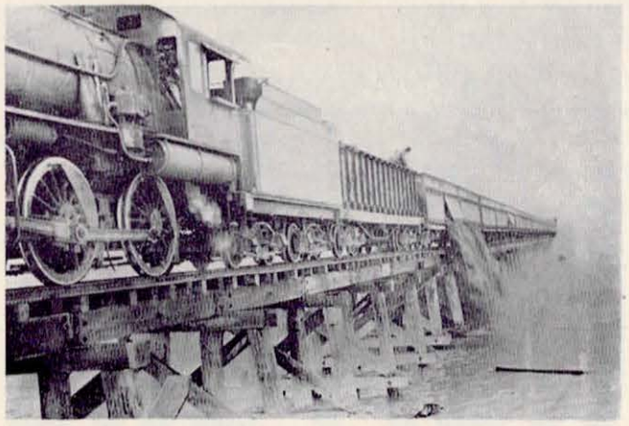
LONGEST TRESTLE PAST 50TH BIRTHDAY



SPECTATOR SPACE was limited when the old Central Pacific drove the last pile in the construction of the 12-mile trestle portion of the Great Salt Lake cutoff. The date was October 26, 1903. Workmen and their supervisors clambered up in the pile driver's rigging or stood on the trestle deck to witness the historic moment. The ladies and other dignitaries, however, got "box seats" in the salt-encrusted skiff in the foreground.



PRESIDENT E. H. HARRIMAN (at extreme right) was among those who attended formal dedication ceremonies a few weeks later. The 28-mile cutoff, which boldly headed straight across the northern portion of the lake, replaced a much longer and more difficult line along the north shore and through the Promontory hills. Curves and grades of this original line limited train lengths and required extra motive power.



GRAVEL TRAINS filled in all but a 12-mile section of the 28-mile cutoff. The work continued after the trestle was in service, as this June 1904 picture testifies. Even today, fill is occasionally required. Last July the SP tore more than 100,000 cu. yd. of rock from a granite cliff with a single blast of 60,000 lb. of dynamite. Most of this was dumped on existing fill. The piling, "pickled" and salt covered, is considered today to be as safe as ever.

TODAY the Southern Pacific's "City of San Francisco" rumbles over the more than 38,000 piles that still support this sea-going railroad. The territory for a considerable distance on either side of the cutoff is now operated under centralized traffic control. And passengers give perhaps not a thought to the 3,000 men who labored for years to build a stretch of railroad that is now traversed in mere minutes.

FREIGHT CARS

6,137 Freight Cars Delivered in November

New freight cars for domestic use delivered in November totaled 6,137, compared with 8,727 in October and 5,929 in November 1952, the American Railway Car Institute and the Association of American Railroads have announced jointly.

Domestic orders for 2,860 freight cars were placed in November, the announcement said, and the backlog of cars on order and undelivered on December 1 was 31,869, a reduction of 48,427 below the backlog of last January 1, which stood at 80,296. A breakdown by types of cars ordered and delivered in November, and of cars on order December 1, follows:

Type	Ordered Nov. '53	Delivered Nov. '53	On Order & Undelivered Dec. 1, '53
Box—Plain	1,830	2,072	9,300
Box—Auto	0	0	1,000
Flat	2	83	2,593
Gondola	150	1,912	5,107
Hopper	110	608	4,223
Covered Hopper	40	235	2,774
Refrigerator ..	600	375	3,087
Stock	0	0	0
Tank	128	586	3,003
Caboose	0	14	137
Other	0	252	645
TOTAL	2,860	6,137	31,869
Car Builders ..	2,128	3,879	19,352
Private Shops .	732	2,258	12,517

PASSENGER CARS

The **Canadian National** has ordered one rail diesel car (RDC-3) from the Budd Company.

The **Canadian Pacific** has ordered 18 all-stainless-steel baggage-dormitory cars from the Budd Company. The cars, all for transcontinental service, will harmonize with the 155 cars ordered from Budd earlier this year (*Railway Age*, June 29, page 18).

SPECIAL

The **New York Central** has ordered 11 tie-tamping machines from the Matisa Equipment Corporation, Chicago. After delivery of this order, the NYC will own 22 Matisa tie tampers.

Supply Trade

Pyle-National Company has purchased the patterns, tools, dies, jigs, fixtures and inventory of two lines of electrical products from the **Adapti Company.** It will manufacture and sell these products, consisting of conduit fittings and vaportight lighting fixtures, under the trade name of "Pylets."

Maxwell D. Millard, Detroit district manager of sales of American Steel & Wire division of **United States Steel Corporation,** has been appointed assistant general manager of sales at Cleveland. He has been succeeded at Detroit by **Edward A. Murray,** who previously served the division in various sales executive positions, but for the past two years has been vice-president, sales of the **Appleton Electric Company.**

MATTHEW J. BETLEY, who has been appointed vice-president and general manager of Aeroquip Corporation, with responsibility for sales, engineering, financial and manufacturing functions. He was formerly vice-president—manufacturing.

T. Y. GEHR, assistant manager of the track equipment department of Pullman-Standard Car Manufacturing Company, at Chicago, who has been promoted to manager of the track equipment department at that point, succeeding John A. Curtis, resigned.

Kenneth L. Vore, formerly director of transportation for the Department of Defense at Washington, has been appointed general traffic manager of the **Westinghouse Electric Corporation.**

The **Ellcon Company,** New York, has been appointed eastern representative of the **West Steel Casting Company,** Cleveland, for sale of electric steel castings for railroad and industrial use.

KARL T. NYSTROM, who has been named assistant manager of the railway division of International Steel Company. He was previously associated with the Standard Railway Equipment Manufacturing Company.

Robert W. Dorn has joined the Pittsburgh sales staff of **L. B. Foster Company.**

C. J. Moore, manager of railway and motive power sales of **Electric Storage Battery Company,** has been promoted to industrial products sales manager. **L. E. Wells,** chief engineer, has been made director of research and engineering, industrial products.

Thomas A. Murphy, manager of the Chicago sales office of **Lewis-Shepard Products, Inc.,** has been appointed district sales manager at Chicago.

Robert B. Smith has been named manager of the renewal parts section of the Transportation and Generator division of **Westinghouse Electric Corporation.** He will be responsible for sale of renewal parts for all apparatus built by the division.

New Facilities

C&O Expanding Trans-Lake Services

Expansion of the Chesapeake & Ohio's Lake Michigan harbor facilities at Ludington, Mich., includes a new carferry slip, reported to cost $1,250,000, and a $185,000 addition to the present marine store there. Another $2-million improvement program is nearing completion at Port Huron, Mich., and Sarnia, Ont., where the C&O is about to resume transfer service across

(*Continued on page 124*)

all that glitters

(for years and years)
is <u>not</u> expensive!

Quite the contrary—when you're talking stainless.

Stainless steel passenger cars—inside and out—are the finest looking cars on the road today. But that's only the beginning.

For stainless (1) enables you to meet both structural and decorative requirements in a single member, (2) makes possible considerable reductions in weight with no sacrifice in strength or safety, and (3) resists attack by dirt, fumes, weather and cleaning compounds—important not only for lasting appearance but also for protecting those hard-to-reach sections within the structure.

Stainless steel, in other words—along with glitter—offers you the dollars-and-cents advantages of simpler, more economical design and far lower maintenance costs.

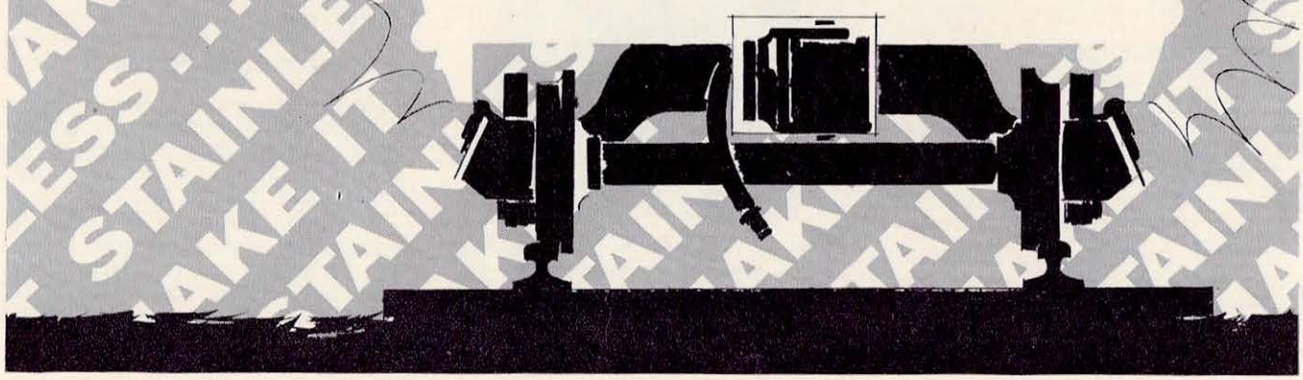
Next time, make it easy on yourself—more attractive to your customers. *Make it stainless.*

VANADIUM CORPORATION OF AMERICA

420 Lexington Avenue, New York 17, New York

DETROIT • CHICAGO • PITTSBURGH • CLEVELAND

Producers of alloys VANCORAM metals and chemicals



A gift for you in '53 and a wish for you for the years to come...

NEW PRECISION IN FREIGHT CAR CONSTRUCTION

INTERNATIONAL STEEL COMPANY

RAILWAY DIVISION EVANSVILLE 7, INDIANA

(*Continued from page 121*)
the St. Clair river to connect with its Canadian lines.

Yard facilities at Ludington also are being expanded. According to reports, the work involves extensive trackage revision, installation of yard illumination towers, construction of a new yard office and installation of a modern communications system. The new carferry slip is to replace the present No. 1 slip. Work on this project will start early next year.

C&O spokesmen are reluctant to comment on overall aspects of this improvement program other than to say that it is "in anticipation of heavier traffic over our cross-lake route." Some observers, however, noting concurrent plans to install centralized traffic control along the line between Ludington and Saginaw, and other parallel improvements, suggest that the C&O may be preparing to make a major bid for through East-West traffic via Buffalo, N.Y., and the C&O's western carferry termini in Wisconsin and upper Michigan.

Atchison, Topeka & Santa Fe.—A freight apron and slip will be constructed at China Basin, San Francisco, by the Duncanson-Harrelson Company, Richmond, Cal.

Chesapeake & Ohio.—A new spur line will be built at Goodwin's Neck, Va., to serve an oil refinery plant the Pan-American Refining Company plans to construct early next year. To reach the plant, the C&O will build five miles of track at an estimated cost of $500,000. Construction will begin shortly and is expected to be completed soon.

Abandonments

Black Mountain.—Division 4 of the I.C.C. has refused to permit this road to abandon its entire line, extending from Kona, N.C., to Burnsville, approximately 10.7 miles. The line connects with the Clinchfield at Kona, and Division 4 found the latter road controls the Black Mountain.

The North Carolina Utilities Commission opposed abandonment of the BM. Division 4 said abandonment of the line would seriously inconvenience shippers who use the line, and added that expenditures for rehabilitation were justified in view of the income which Clinchfield realizes from traffic originating on the BM.

Authorizations

ATLANTIC COAST LINE.—To abandon 9.6 miles of branch line, extending from a point near Marlboro, S.C., to a point near Mont Clare. No service has been performed on the line since December 1948.

DULUTH, MISSABE & IRON RANGE.—To abandon approximately 3 miles of branch line in St. Louis county, Minn. Removal of the segment will clear the way for a large open-pit taconite mine.

MISSOURI PACIFIC.—To abandon 9.9 miles of branch line between Elden, Mo., and Bagnell. Operation of the line has been conducted at substantial losses for the past three years, Division 4 said.

OREGON PACIFIC & EASTERN.—To abandon a 4.2-mile segment of its main line, extending from Culp Creek Station, Ore., to the end of the line at Disston Station. The line served a lumber mill which was destroyed by fire in 1949, and no traffic has moved over the segment since 1951.

PENNSYLVANIA.—To abandon its car ferry operations across Lake Michigan between Muskegon, Mich., and Milwaukee, Wis. The car ferry has been operated jointly with the Grand Trunk Western, and the latter road will continue the service. The PRR will abandon trackage rights operation over segments of the Grand Trunk and the Muskegon Railway & Navigation Co. at Muskegon and Milwaukee.

PORT ANGELES WESTERN.—To abandon its entire line, approximately 49.5 miles, extending from Forks, Wash., to a connection with the Milwaukee at Disque. In addition, the road will abandon operating rights over a 20.7-mile segment of the Milwaukee between Disque and Port Angeles. The PAW discontinued all train service in October 1951 because of its inability to pay wages and other operating expenses, Division 4 said.

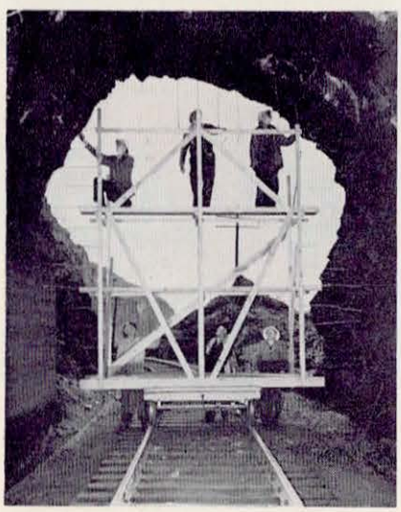
WESTERN MARYLAND.—To abandon four segments of branch line, totaling 17.5 miles, together with side tracks totaling 3.6 miles, in Allegany County, Md. Coal mines formerly served by these lines have been worked out.

Financial

IC Soon to Have Only One Mortgage

The Illinois Central announced December 12 an offering of $15 million consolidated mortgage bonds, designated series "F," proceeds from sale of which, together with $12 million to be obtained from sale of consolidated mortgage bonds series "D" will be used to redeem, on February 1, 1954, all the road's 4¾ per cent debentures due in 1966. These debentures are outstanding in the amount of $34,743,000. Balance of funds required for the redemption—approximately $8.5 million—will be supplied out of company funds.

President Wayne A. Johnston commented that: "With the redemption of the 4¾ per cent debentures, all the railroad's bonded debt will be covered by one mortgage which will be the only lien on all lines and property owned by the railroad." Upon completion of the financing, the consolidated mortgage bonds outstanding will total $129,408,000.



"TWO-BY-FOURS AND TWIGS," says the Canadian Pacific, make up this "home-made," but accurate and efficient template which is being used to check clearances in 44 British Columbia tunnels in preparation for next year's arrival of Canada's first "scenic dome" observation cars. The 36 dome cars—part of a $38-million order for 155 cars placed by the CPR with the Budd Company earlier this year (*Railway Age*, June 29, page 18)—will be used on transcontinental trains.

Greyhound Corporation.—*Acquisition of Pennsylvania Greyhound.*—Greyhound has applied to the I.C.C. for authority to acquire control of Pennsylvania Greyhound by acquiring the 50 per cent interest (77,000 shares of stock) held by American Contract & Trust Co., a subsidiary of the Pennsylvania. The purchase price is $6,260,000. Pennsylvania Greyhound proposes to pay a stock dividend prior to the acquisition, and an application to this effect also has been filed with the I.C.C. If consumated, the trust company would emerge with 30,000 shares of Pennsylvania Greyhound preferred, and when the latter company is eventually merged into Greyhound Corporation, these preferred shares would be exchanged for Greyhound preferred.

Inland Waterways Corporation.—*Transfer of Operating Rights.*—Division 4 of the I.C.C. has given final approval to transfer of operating rights from the government owned I.W.C. to Federal Barge Lines, a private company. The latter company purchased I.W.C. rights and equipment for $9,000,000, and has been conducting the business since September under temporary I.C.C. approval (*Railway Age*, September 21, page 113, and August 3, page 9).

Federal Barge Lines, the new operating company, is a wholly owned subsidiary of the St. Louis Shipbuilding & Steel Co.

Securities

Boston & Maine.—*Accumulated Preferred Dividend.*—B&M directors have declared a dividend of $6.45 a share on the five per cent preferred stock, payable December 30 to stockholders of record December 18. The payment will represent accumulated but unpaid dividend arrears on the

issue from January 1, 1949—when the road's stock modification plan, which consolidated several different classes of stock into two issues, a preferred and a common, became effective—to January 1, 1953. This will be the first dividend paid since the effective date of the stock modification plan.

Denver & Rio Grande Western. —*Stock Dividend.*—Division 4 of the I.C.C. has authorized this road to issue 581,728 shares of $100 par common stock, to be distributed in part as a 50 per cent stock dividend on outstanding common stock. This dividend will require 193,478½ of the new shares The remainder, 388,249½ shares will be used in converting outstanding preferred stock on the basis of one-and-one-half shares of common for each share of preferred (*Railway Age*, August 31, page 23).

The increase in capitalization resulting from the stock dividend will be charged to earned surplus. As of July 31, 1953, the road had an unappropriated earned surplus of $44,902,028.

Initially, the D&RGW asked the I.C.C. for authority to issue 333,245 shares of common stock for the dividend and for conversion purposes (*Railway Age*, September 7, page 110). It subsequently raised the request to 581,728 shares to allow for conversion of all outstanding preferred stock, if offered.

The three members of Division 4 split two-to-one in approving the D&RGW proposal. The dissenter, Commissioner Cross, said the road emerged from "drastic reorganization" in 1947, and a longer period of time should elapse before issuing such a large stock dividend. Commissioner Mitchell, on the other hand, wrote a concurring opinion in which he said the declaration of a stock dividend when the proposed dividend is permissible within the capital structure "is a managerial function and I.C.C. should not interfere with a managerial function unless it be against public policy."

Lehigh Valley. — *Stock Option Plan.*—The I.C.C. has authorized this road to issue 66,950 shares of common stock as the second step in a stock option plan for officers and key employees. The plan was instituted by the LV board of directors in 1951, and the first step, approved by the commission in May 1952, called for issuance of 36,000 shares of LV common stock (*Railway Age*, May 19, 1952, page 182). Options are granted to key managerial personnel as a "special incentive" for them to utilize their best efforts for continued growth of the road. A three-man committee from the LV board administers the plan. The 66,950 shares to be issued at this time constitute the remainder of the road's "authorized but unissued" common stock.

Security Price Averages

	Dec. 8	Prev. Week	Last Year
Average price of 20 representative railway stocks	59.20	60.59	67.82
Average price of 20 representative railway bonds	90.68	90.79	95.13

Authorization

PENNSYLVANIA.—To assume liability for $4,230,000 of series AA equipment trust certificates, second and final installment of a $9,030,000 issue. The present installment will be applied toward acquisition of 720 new freight cars costing an estimated $5,639,050 (*Railway Age*, January 16, page 61, and March 9, page 17). Division 4 approved sale of the second installment for 99.6553 with interest at 3⅛ per cent—the bid of Salomon Bros. & Hutzler and three associates—which will make the average annual cost of the proceeds to the road approximately 3.2 per cent. The certificates, to be dated as of March 1, 1953, will mature in 15 annual instaliments of $282,000 each, beginning March 1, 1954. They were reoffered to the public at prices yielding from 2 to 3.25 per cent, according to maturity.

Dividends Declared

BOSTON & MAINE.—5% preferred, $6.45, accumulative, for period January 1, 1949, to January 1, 1953, payable December 30 to holders of record December 18.

CHICAGO, BURLINGTON & QUINCY.—$2, payable December 30 to holders of record December 18.

ELMIRA & WILLIAMSPORT.—7% preferred, $1.65, semiannual, payable January 4 to holders of record December 18.

NEW YORK, NEW HAVEN & HARTFORD.—5% preferred A, $2, accumulative, payable January 5 to holders of record December 11.

NORTHERN PACIFIC.—75¢, quarterly, payable January 26 to holders of record January 4.

RICHMOND, FREDERICKSBURG & POTOMAC.—common, 75¢, quarterly, and $1, extra; divi-

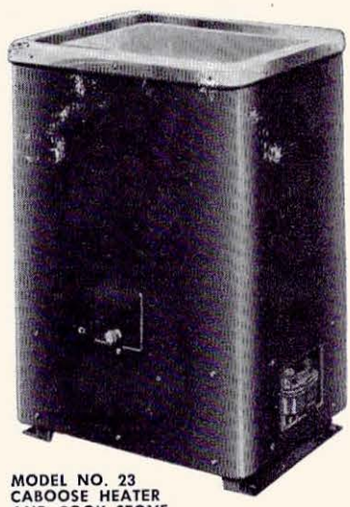
(*Continued on page 128*)

BUY GENUINE "MINK"
For that extra touch that does so much.

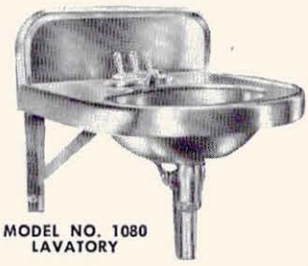
The oil stove that has been tested by leading railroads and found to meet all the requirements for caboose way cars, etc.

Made of heavy gauge steel with pot type burner and cast top for cooking purposes. Heavy steel base for bolting unit to floor and furnished with special regulator valve. Unaffected by tilting or vibration to give an even and constant heat.

Can be furnished with supply tanks and fittings when specified. Ask for form T1 for additional information.



MODEL NO. 23
CABOOSE HEATER
AND COOK STOVE
Patent applied for



MODEL NO. 1080
LAVATORY

A stainless steel satin finish lavatory, equipped with tilting lever faucets for hot and cold water and pop up waste.

Supplied with heavy duty steel mounting brackets with provisions to allow lavatory to be mounted from 0" to 3" from wall.

Ask for
Railroad Specialties
Catalogue No. R. 52
By

MINK-DAYTON, INC.
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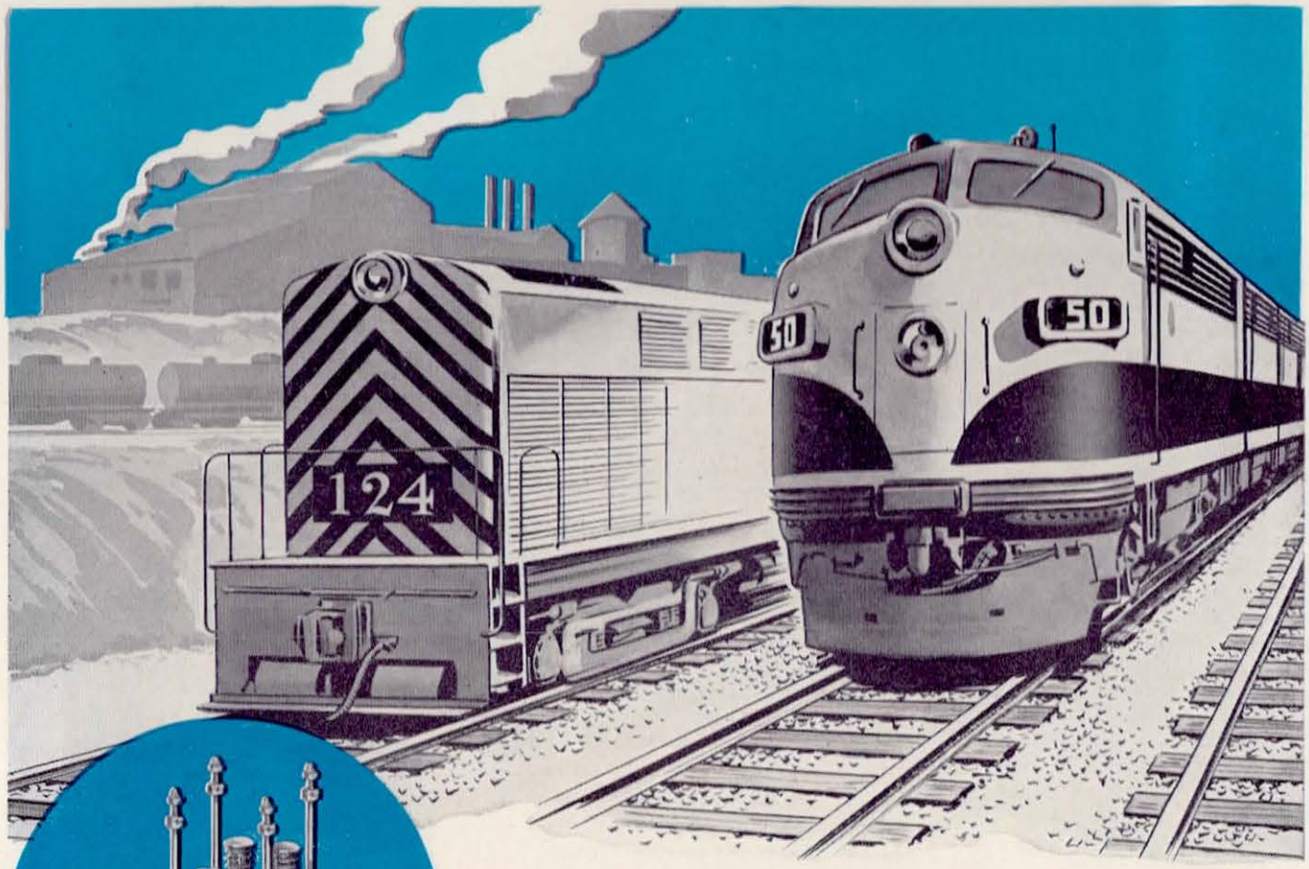
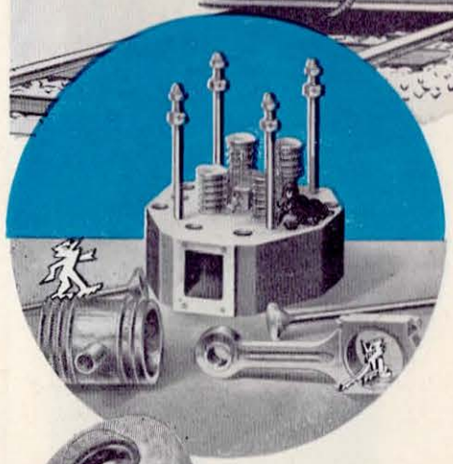
117 N. Findlay St., Dayton 3, Ohio

DAYTON MINK OHIO





WEARMITES

Make Dirty Oil Expensive

Grit, Dirt and Tarry Sludge are the invisible mites of wear that cost so much in maintenance and down time of Diesel Engines. Yes, Wearmites make dirty lubricating oil expensive . . . too expensive for any railroad.

WIX Engineered Filtration rids diesel lubricating oil of WEARMITES thoroughly, constantly, economically. And, you have in WIX Engineered Filtration, a selection of filtering media so that you may provide a "prescription formula" to suit your equipment, type of service or particular climatic conditions.

Keep the oil in your Diesel Locomotives free from Wearmites . . . you'll keep maintenance costs down and engine performance up. Write for complete information today!

Precision construction . . . controlled density . . . uniform quality . . . self-contained sealing gaskets and many other WIX *plus* features add up to WIX Engineered Filtration. Whether for Lubricating or Fuel Oil, crush-proof, non-collapsible WIX Filter Cartridges show a decided dollars and cents advantage for you.

LUBE wix FUEL

RAILROAD OIL FILTERS

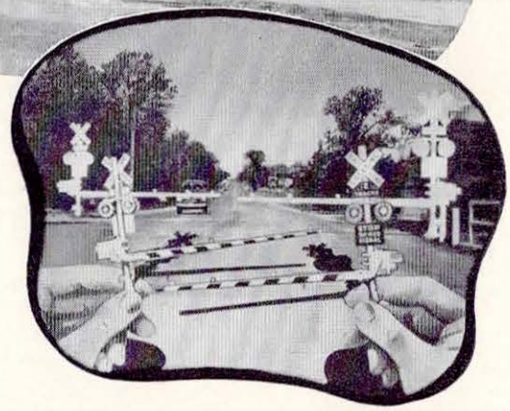
WIX CORPORATION · GASTONIA, N. C.

WAREHOUSE STOCKS IN: GASTONIA • ATLANTA • NEW YORK • CHICAGO • ST. PAUL • ST. LOUIS • SACRAMENTO

MODEL 10 AUTOMATIC SIGNALS*

protect busy crossings on a hundred railroads

Positive safety plus economy. These make Model 10's first choice with traffic experts seeking maximum protection at minimum cost. So reliable is Model 10 performance that *not a single accident has ever occurred as a result of operation failure on the part of these signals.* And cost-wise, Model 10's are top rated. Easy installation, minimum operating cost and virtually no replacement of parts make these signals a *best buy* in grade crossing protection.



Cost-wise and otherwise, Model 10's will fit into your modernization picture.

There's much more to tell about Model 10 safety and economy. Get complete information . . . Write today for Brochure RA-1253.

*Pat. in the U.S.A. and in Canada

WESTERN RAILROAD SUPPLY COMPANY

General Offices and Factory:
2428 SOUTH ASHLAND AVENUE • CHICAGO 8, ILLINOIS

(*Continued from page 125*)

dend obligation, 75¢, quarterly, and $1, extra, all payable December 21 to holders of record December 5.

SEABOARD AIR LINE.—80¢, quarterly, payable December 28 to holders of record December 11.

UNITED NEW JERSEY R.R. & CANAL.—$2.50, quarterly, payable January 11 to holders of record December 19.

WABASH.—$3, payable December 24 to holders of record December 11.

WEST JERSEY & SEASHORE.—$1.50, semiannual, payable January 4 to holders of record December 15.

Railway Officers

Western Indiana-Belt Chief Retires

M. F. Stokes closes a 53-year career; L. A. Evans succeeds him as president of affiliated Chicago roads

M. F. Stokes

L. A. Evans

Concluding a railroad career that has spanned 53 years, including 14 years as president of the Chicago & Western Indiana and the Belt Railway of Chicago, Michael F. Stokes retired December 1 under the rules of these affiliated companies. His retirement, and the election of Lewis A. Evans, vice-president and general manager, to succeed him as president of both roads, were reported briefly in the November 30 *Railway Age*, page 78.

The C&WI operates some 570 miles of trackage within the city of Chicago, furnishing freight and passenger terminal facilities for its proprietary lines —the Chicago & Eastern Illinois, the Monon, the Erie, the Grand Trunk Western and the Wabash. The Santa Fe is a 999-yr. tenant of the company's passenger terminal—historic Dearborn station, which is also the terminus of a small suburban service operated by the Western Indiana itself.

The Belt—affiliated with the C&WI through somewhat complex leasing arrangements—is a key segment of the Chicago switching district, as it connects virtually every trunk and belt line within the city. In addition to the five C&WI proprietary lines, seven other major trunk carriers make up the Belt's ownership.

For the most part, the Western Indiana and the Belt share a staff of the same general and executive officers.

Major Hurdle—Perhaps the outstanding achievement of Mr. Stokes' administration was the $65-million refinancing of the Western Indiana undertaken in 1952. In addition to retiring then outstanding bond issues, proceeds of the sale allowed an additional $2.5-million for additions and betterments. Subsequent improvements to the property included expansion of mail terminal facilities at Dearborn station; a new interlocking at 47th street junction (*Railway Age*, September 28, page 16); and modernization of the passenger coach yard at 51st street—currently in progress. The Belt recently completed extension of a number of classification tracks at Clearing, and added a new trainmaster's office, a welfare building and a caboose terminal.

Future improvements for the roads will not be spectacular or radical, Mr. Evans told a *Railway Age* reporter. Most of them, he said, have been planned for some time—such as a modern interlocking for Pullman Junction; additional block signals for the Belt; and extension of Clearing yard's pneumatic tube system.

Looking further ahead, he foresees application of business machines and modern communications equipment to consolidate present routing functions of waybills with per diem, demurrage, and possibly even company wheelage and proprietorship accounting onto a single machine card for each car. He admits that this is a bit "avant garde" in the light of present day-to-day operating problems, but it is in the back of his mind whenever he talks about ways to speed movement of cars through the Chicago terminal.

With IC—Mr. Stokes entered railroad service in 1900 with the Illinois Central after having attended Chicago Business College. Before he joined the Belt in 1913 as chief clerk in the office of general superintendent, he had served in a wide variety of IC clerical positions and had spent four years with the Missouri Pacific as chief clerk in the office of superintendent of the Missouri and Arkansas divisions; agent and telegrapher at Horine, Mo.; and assistant chief clerk in the office of general manager at St. Louis. He returned to the IC as chief clerk in the office of superintendent of terminals in 1911, and his move to the Belt came two years later. In 1915 he was appointed trainmaster of the Belt and in the following year, chief clerk in the office of president of both roads. During World War I he served the federal manager in this same capacity. In 1920 he was appointed assistant to president of both roads and in 1927 was named also secretary. He served as secretary and treasurer from 1935 to September 1939, when he was elected president and general manager.

PRR Man—Mr. Evans joined the Western Indiana-Belt organization in August 1951, after having spent 23 years with the Pennsylvania. After graduating from Carnegie Institute of Technology with a B.S. degree in Civil Engineering, he entered service as an assistant on engineer corps in August 1928. He became assistant supervisor of track and later supervisor of track; in November 1943, was named assistant division engineer, and in the following year was appointed division engineer. After being transferred to the Philadelphia Terminal division, he was named division superintendent at Indianapolis. He next served as assistant superintendent of the Consolidated Southwestern division at Indianapolis, following which he came to the Belt and Western Indiana as vice-president and general manager.

ASSOCIATION OF AMERICAN RAILROADS.—H. Y. Turner, C. B. Mattingly and **W. F. Betts,** assistant statisticians in the Bureau of Railway Economics, Washington, D.C., have been appointed statisticians.

R.E.L. Harmon, special representative of the Freight Loss and Damage Prevention Section at Chicago, has been appointed furniture specialist at that point, succeeding **F. C. Dansereau,** resigned. Named to succeed Mr. Harmon is **F. J. Kleitz.**

ATLANTIC COAST LINE.—H. H. Hill, superintendent transportation of

the Northern division at Savannah, Ga., has been appointed general superintendent of that division, succeeding **J. C. Mixon,** who has accepted the position of general manager of the Atlanta & West Point, the Western of Alabama and the Georgia. **J. W. Plant,** assistant to general manager at Wilmington, N.C., has been appointed acting superintendent transportation, Northern division, succeeding Mr. Hill.

BOSTON & MAINE.—Allan N. Leavitt, assistant engineer of the New Hampshire division at Concord, N. H., has been appointed engineer of grade crossings at Boston, succeeding **Harold W. Legro,** who has retired after more than 45 years of railroad service, including the past 11 years as engineer of grade crossings.

BURLINGTON.—R. E. Taylor, assistant mechanical engineer at Chicago, has been appointed mechanical engineer at that point, succeeding **H. E. Hinds,** who retired November 30.

F. B. Leonard, superintendent of rules, has retired and has been succeeded by **C. E. Temple,** train rules examiner.

CANADIAN PACIFIC.—D. H. Dunphy, division engineer at Edmonton, Alta., has been transferred to Regina, Sask., succeeding **G. B. Mercer,** who has resigned to join the Board of Transport Commissioners' engineering staff. **S. Brownstone,** roadmaster on the Portage division at Winnipeg, has been promoted to division engineer at Lethbridge, Alta., succeeding **A. W. B. Fish,** who has been transferred to Edmonton to replace Mr. Dunphy.

CAROLINA & NORTHWESTERN (Southern).—Spencer M. Percival, assistant vice-president at Danville, Va., has been appointed assistant vice-president in charge of maintenance—engineering at Charlotte, N.C. Mr. Percival will assume the duties of the late **Randall F. Holden,** engineer maintenance of way (*Railway Age*, November 16, page 129).

CHICAGO GREAT WESTERN.—D. D. McMurray has been appointed junior communications engineer at Oelwein, Iowa.

ERIE.—Frank B. Wildrick has been appointed superintendent property protection and fire prevention. The position of superintendent property protection has been abolished.

Lewis M. Swoap, assistant division engineer, New York division, at Jersey City, N. J., has been appointed division engineer, Terminal division, with the same headquarters, succeeding **Paul Sobbott,** who has retired after 38 years of service.

GEORGIA.—S. R. Young has been appointed chief executive officer at Atlanta, Ga.

LOUISVILLE & NASHVILLE—NASHVILLE, CHATTANOOGA & ST. LOUIS.—M. N. Perry, terminal trainmaster at Nashville, Tenn., has been appointed assistant superintendent, Nashville terminals.

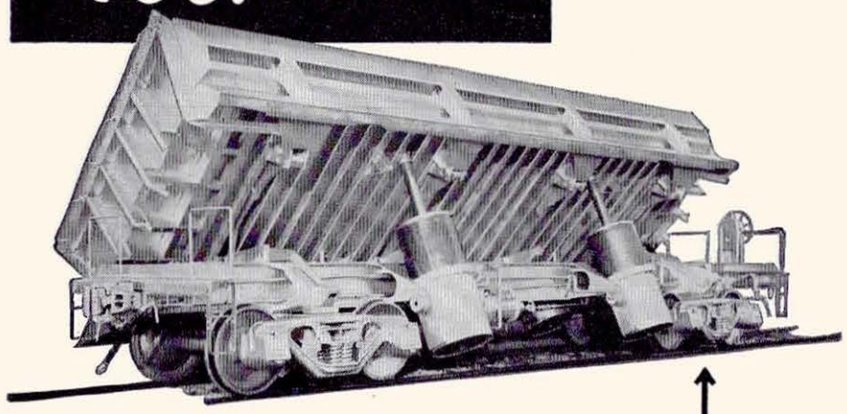
NEWBURGH & SOUTH SHORE.—R. E. Butler, vice-president and superintendent at Cleveland, has been appointed vice-president there. **J. D. Henry** has been appointed general superintendent at that point. Mr. Henry also will continue in his president position of general superintendent of the Lake Terminal at Lorain, Ohio.

NEW YORK CENTRAL.—William M. Smith, assistant manager, mail and express, has been appointed manager of mail and express traffic at New York, succeeding **Walter J. Treloar,** who has retired, after 20 years with the NYC.

Andrew B. Pulliam has been appointed to the new position of chief industrial engineer at New York (*Railway Age*, December 7, page 14). Mr. Pulliam has been chief of standards and methods of the Electro-Motive division of General Motors Corporation at LaGrange, Ill., since 1943.

(*Continued on page 134*)

BOOSTS EARNINGS TOO!



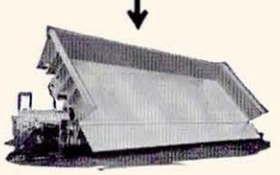
The Differential Air Dump Car has a way with operating expenses — cuts 'em down!

There's another pair of massive muscles on the other side of the car, too, means two-way dumping and greater flexibility.

They're built to take rough treatment — whether it's the slam-banging of the clam or the sudden dumping of tons of hot slag. These cars can take it and can come back faster for more.

Higher ratio of payload to dead weight! Fewer trips to the shop and shorter stays when they do go! Add all these up and it spells lower operating costs — another way to say "Boosted Earnings". Write for the full story on these cars.

DUMPS BOTH WAYS

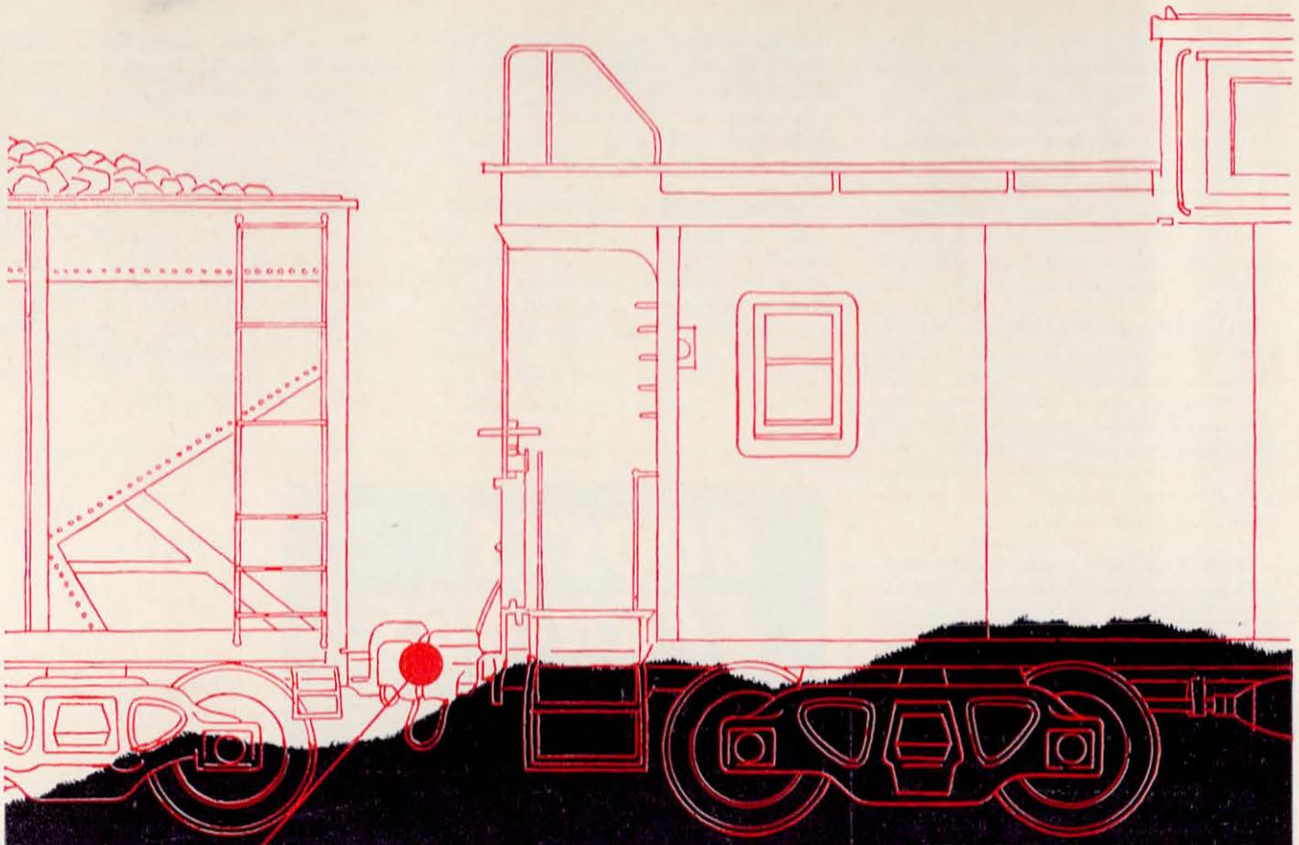


Other Differential Products: Locomotives, Mine Cars, Mine Supply Cars, Rock Larries, Mantrip Cars, Dumping Devices and Complete Haulage Systems.

DIFFERENTIAL STEEL CAR COMPANY

FINDLAY, OHIO

SINCE 1915 — PIONEERS IN HAULAGE EQUIPMENT



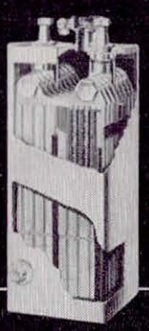
SHOCKS
don't hurt an
EDISON battery

STEEL negative plate! STEEL positive plate! STEEL cell container!

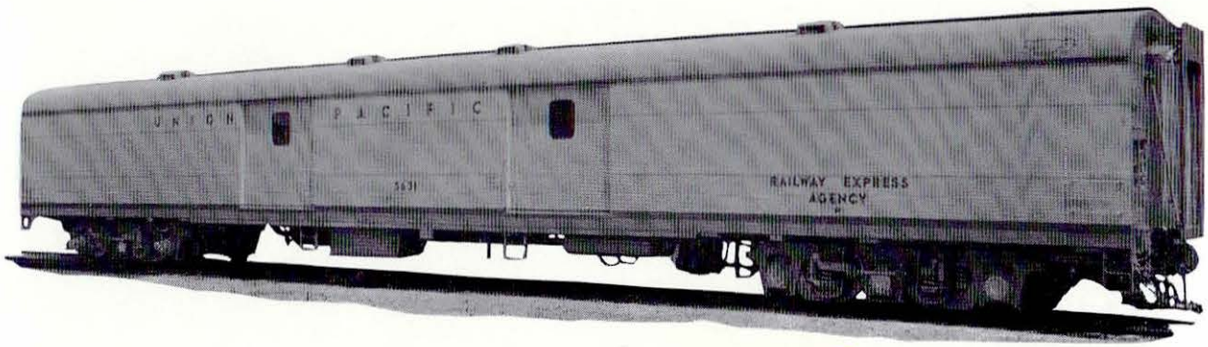
When you buy an EDISON, you get the battery with the *all-steel* cells . . . the strongest construction known. Even the severe shocks incidental to freight-train operation don't hurt it. What's more, it's unharmed by *fast* charging or the overcharging and over-discharging inherent in this class of service.

Equally important is the *unusually long life*. One railroad, for instance, gets an average of 26.18 years from its car-lighting batteries. Add this to the other features and you'll see why an EDISON gives the lowest depreciation and maintenance costs of any battery. For more information, ask for Bulletin S.B. 3802; consult your nearest Edison field engineer.

Most Dependable Power
—Lowest Over-all Cost
. . . you get both
with an EDISON

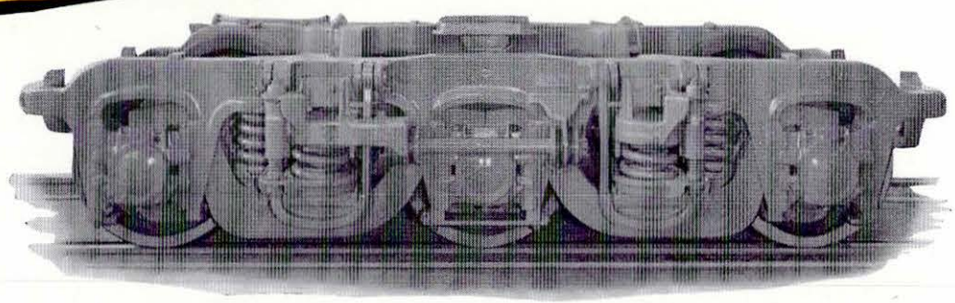


EDISON
Nickel • Iron • Alkaline
STORAGE BATTERIES
Edison Storage Battery Division of
Thomas A. Edison Incorporated, West Orange, N. J.



Built by A.C.F.

For the Union Pacific . . .



Six-Wheel Outside Swing Hanger Truck with All-Coil Springs.

33 New 85-Foot Baggage Cars

Thirty-three 85-foot Baggage Cars are now being delivered or on order for the Union Pacific Railroad, all equipped with latest design Commonwealth 6-wheel outside swing hanger type all-coil spring trucks and one-piece cast steel underframe ends with integral body bolsters and end sills. These new cars are for service in the Pacific Coast Streamliners, operating between Chicago and Los Angeles, San Francisco and Portland.

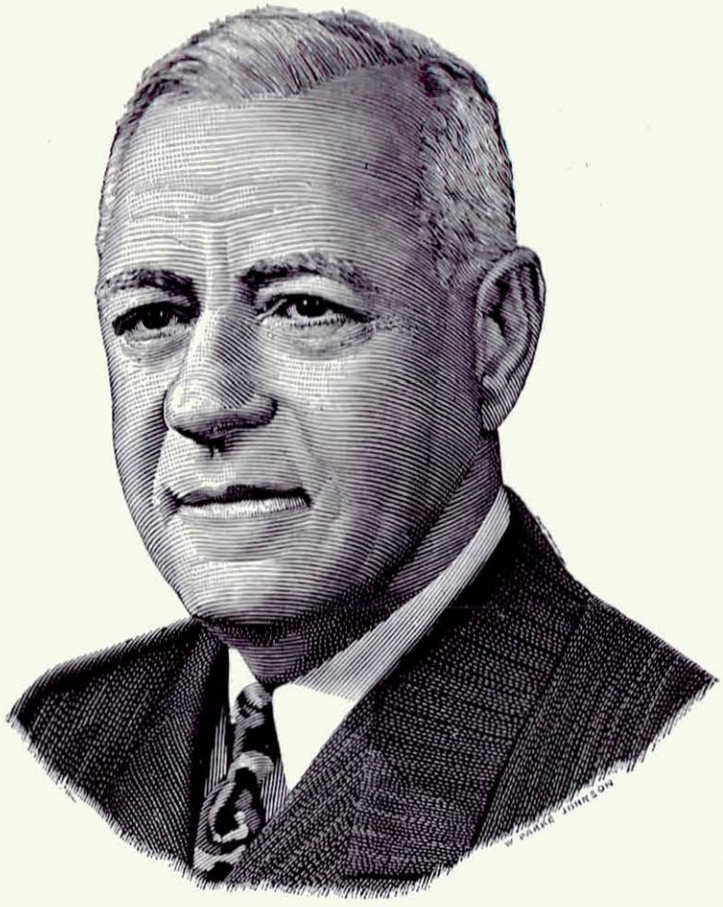
Commonwealth 4 or 6-wheel trucks with outside spring suspension provide the advantages of better riding cars, greater accessibility of parts for inspection and maintenance, and substantially lower upkeep costs.

Thoroughly proven on the leading railroads of America, Commonwealth outside swing hanger trucks are your finest value for better performance and maximum economy.

GENERAL STEEL CASTINGS

GRANITE CITY, ILL. EDDYSTONE, PA.

"... More than 6,000 of our employees are now participating..."



MELVIN H. BAKER
Chairman of the Board, National Gypsum Company

"The Payroll Savings Plan for Bonds provides a convenient and profitable way for America's wage earners to save. Millions of Payroll Savers have become proud owners of homes purchased with Bonds bought this way. It also helps our national government with its problems of managing the public debt. We in National Gypsum urge the stimulation of the Payroll Savings Plan and are proud to report that more than 6,000 of our employees are now participating."

Here's another success story of a person-to-person canvass:

In the Wahoo (Nebraska) ordnance plant of the National Gypsum Company, employee participation in the Payroll Savings Plan was a very low 1.73%.

In September of last year, with the whole-hearted encouragement of top management, the 3,000 employees of Gypsum's Ordnance Plant organized to conduct a person-to-person canvass to put a Payroll Savings Application Blank in the hands of every employee.

90% of the employees signed up in the opening days of the campaign. By September 12th, employee participation was 93.7%. On October 2nd, participation was almost 97%—and still going up.

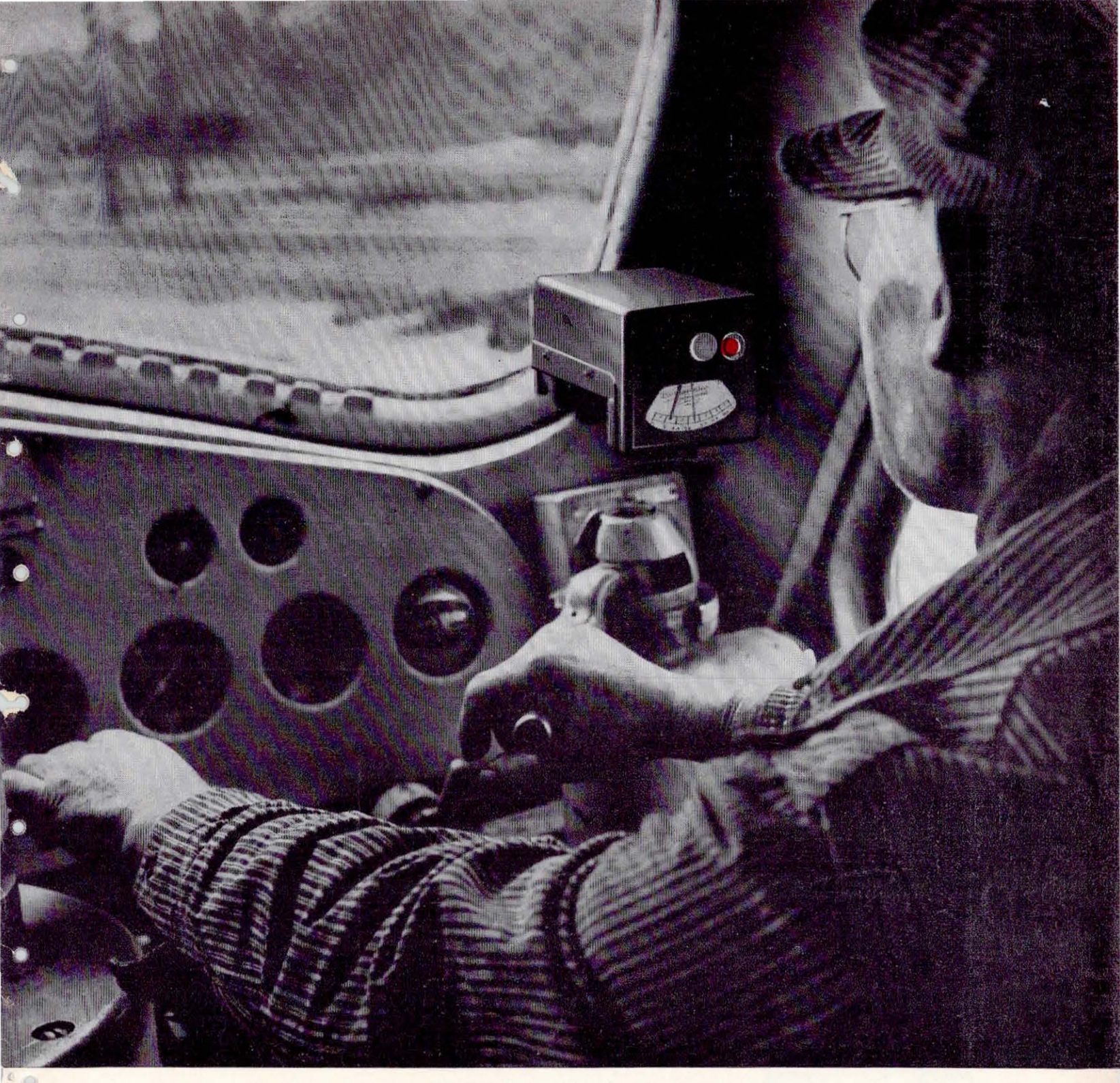
To quote from National Gypsum's printed report of the Payroll Savings campaign:

• "Did we use fancy charts! Did we use advertisements? Did we have long-winded meetings. Did we give prizes for production? The answer is No! We put the proposition squarely to the people, and we reported to the people once a week in bulletin form to let them know where they stood in relation to other departments as well as to the plant total. Once the spirit of competition and teamwork caught fire, once it became a matter of personal pride; a successful conclusion was only a matter of time and effort."

Justifiably proud of its sponsorship of the Payroll Savings Plan and the 97% enrollment of its employees, National Gypsum Company prepared a very interesting folder, "Bombs and Bonds for National Defense. The Savings Bond Program of the National Gypsum Company." Savings Bond Division, U. S. Treasury Department, Suite 700, Washington Building, Washington, D.C., will be glad to send you a copy. Read how easy it is to build *your* Payroll Plan to 90% or more participation.

The United States Government does not pay for this advertisement. It is donated by this publication in cooperation with the Advertising Council and the Magazine Publishers of America.

RAILWAY AGE



Engineer's "guide to better handling"

The Westinghouse Type "B" Brake Pipe Flow Indicator is just a small instrument but it gives the engineer a great deal of information as to what is happening in the brake pipe of his train. Our representatives will be glad to tell you all about it.

Westinghouse Air Brake
COMPANY

AIR BRAKE DIVISION WILMERDING, PA.

(*Continued from page 129*)
He started his career with General Motors in 1926 as a tool room apprentice, and subsequently held supervisory and executive posts in the

Andrew B. Pulliam

Chevrolet Gear and Axle division at Detroit and the Allison division at Indianapolis, before assuming his Electro-Motive position.

NICKEL PLATE. — Sylvester J. Witt, assistant vice-president—traffic (sales) at Cleveland, has been appointed vice-president—traffic, with the same headquarters, succeeding **J. Hudson Day,** who will retire December 31 at his own request, after more than 47 years of service. Mr. Witt was born at Cincinnati, November 14, 1889, and entered railroad service in September 1905 with the Baltimore & Ohio. He joined the Akron, Canton & Youngstown in December 1911, serving as

Sylvester J. Witt

general freight and passenger agent and traffic manager. On November 16, 1935, Mr. Witt became freight traffic manager in charge of rates and divisions of the Nickel Plate, advancing to assistant vice-president in charge of rates and divisions on June 1, 1947. He was named assistant vice-president in charge of sales on April 1, 1953.

J. R. Reed has been appointed general agent at Louisville, Ky., succeeding **Kenneth B. Chilcot,** whose transfer to Buffalo, N. Y., was reported in *Railway Age,* November 16.

NORFOLK SOUTHERN.—J. Milton Dillard, assistant freight traffic manager at Atlanta, Ga., has been appointed to the newly created office of assistant freight traffic manager, sales and service, at Raleigh, N. C., with supervision of all NS traffic agencies in the South. **C. C. Martin,** division freight agent at Charlotte, N. C., has been named assistant general freight agent there. **Robert L. Howard,** assistant division freight agent at Charlotte, succeeds Mr. Martin as division freight agent.

PANHANDLE & SANTA FE.— L. R. Mitchell, acting trainmaster at San Angelo, Tex., has been appointed trainmaster there, succeeding **C. W. Herbert,** who retired December 1.

QUEBEC, NORTH SHORE & LABRADOR. — Arden Lybee has been appointed operating superintendent. He was formerly assistant superintendent of the Union Pacific at Las Vegas, Nev.

SEABOARD AIR LINE. — J. C. Wroton, Jr., has been appointed diesel supervisor (system) at Hamlet, N.C., succeeding **G. O. Whitesell,** resigned. **W. G. T. Tuttle** succeeds Mr. Wroton as assistant to diesel superintendent at Norfolk, Va.

W. J. Jarrett has been named diesel superintendent at Norfolk, succeeding **D. M. Wood,** who replaces Mr. Jarrett as division master mechanic of the Virginia division at Raleigh, N.C. **E. A. Thurmond** has been named diesel supervisor (system) at Jacksonville, Fla.

SOO LINE.—Richard O. Lewis, assistant industrial commissioner at Minneapolis, has been advanced to industrial and real estate commissioner at that point, succeeding **Rufus S. Claar,** who retired November 1.

SOUTHERN FREIGHT ASSOCIATION.—Jason W. Cleveland has been elected a member of the Standing Rate Committee, succeeding **John H. McMahon,** whose promotion to assistant to chairman at Washington, D.C., was reported in *Railway Age,* November 23.

SOUTHERN PACIFIC. — L. McDonald, assistant superintendent at San Antonio, Tex., has been promoted to superintendent at Houston, succeeding **E. P. Evans,** who has been transferred to Lafayette, La., and New Orleans, to replace **T. A. Greeson,** who recently died. Mr. McDonald has been succeeded by **O. W. Story,** assistant superintendent at El Paso, who in turn has been replaced by **J. D. Ramsey,** transferred from San Antonio. **R. A. Kornegay,** trainmaster at San Antonio, has been appointed assistant superintendent at Victoria, Tex., succeeding **R. W. Hickman,** who replaces Mr. Ramsey. **P. F. Satterwhite, Jr.,** has been named to succeed Mr. Kornegay.

J. G. Moors has been appointed auditor freight accounts at Houston, succeeding **W. J. Sauer,** who has retired. Named as assistant auditor freight accounts is **J. R. Bergeron,** assistant to auditor freight accounts, who has been replaced by **J. E. Hines.**

William M. Jaekle, assistant chief engineer at San Francisco, has assumed new duties as a result of the recent retirement of **C. J. Astrue,** who also was assistant chief engineer at that point (*Railway Age,* November 30). **William J. Jones,** division engineer at Sacramento, Cal., has been appointed assistant engineer—maintenance of way and structures at San Francsico, while **William F. Turner,** construction division engineer at Roseville, Cal., has been named to succeed him.

RUTLAND.—L. G. Bucklin has been appointed auditor. The position of office manager, general accounting department, has been abolished.

TEXAS & PACIFIC.—Forrest R. Denney, assistant mechanical superintendent at Dallas, has been named supervisor of equipment at New Orleans.

WESTERN MARYLAND.—As reported in *Railway Age,* November 23, **Roy R. Gunderson** has been appointed bridge and structural engineer, system, at Baltimore.

Roy R. Gunderson

OBITUARY

Arthur X. Williams, 66, former assistant to president of the **Reading,** died December 1 at his home in Lansdowne, Pa.

Howard L. McLaughlin, retired general northwestern freight agent of the **Milwaukee,** at Minneapolis, died there December 1.

Robert H. Crozier, retired general passenger agent of the **Spokane, Portland & Seattle** at Portland, Ore., died November 25.

Current Publications

(Continued from page 68)

shipped in open-top equipment. The loading methods formulated cover a number of new items, some of which have given trouble en route because of inadequacy of previous loading methods. Many of these instances have been brought to the attention of the Loading Rules Committee by both the carriers and the Department of Defense and the new and revised loading figures are expected to eliminate a great percentage of the trouble experienced. The new figures cover various types and sizes of trailers, new model tanks, buoys, boat cradles, sectional barges, straddle trucks, rock crushers and other types of road-making equipment, and jet, rotary and helicopter engines in metal and wood containers.

•

THE LITTLE DROPS OF WATER (5 cents each); WHEN THINGS GO WRONG (2 cents each); LET'S TIGHTEN UP THE LEAKS (6 cents each); THE WINNAH! (4 cents each); WHAT'S DONE WITH INDUSTRY'S DOLLAR? (5 cents each). Employee Information Service, National Association of Manufacturers, 14 West 49th st., New York 20. Deduct ½ cent from above prices for quantities over 3,000. Special rates for unusually large orders may be arranged. All prices f.o.b. New York.

These new booklets are for employees, executives, foremen and others.

"The Little Drops of Water" imbues the reader with the thought that one does not have to be famous to live a happy and useful life. It points out that workaday folks in factories, homes, farms and offices are also serving their fellow man.

"When Things Go Wrong" is an inspirational message for comfort . . . when things go wrong.

"Let's Tighten Up the Leaks," with its bright red plastic monkey-wrench on the cover, dramatizes the need for good housekeeping in home, company, and government. Employees may detach the miniature wrench and save it as a lucky charm . . . constantly reminding them of the value of efficiency.

"The Winnah!," listing the history of heavyweight championship bouts in which the title changed hands, draws the parallel conclusion that companies are engaged in a battle for customers' patronage and must be good to come out on top.

"What's Done with Industry's Dollar?" uses a quiz approach and giant dollar to earn employees' attention. Employees see for themselves that profits represent only a tiny share of the average company's income—moreover that profits help make their own jobs more secure.

•

ACCIDENT RATES—1952. National Safety Council, 425 N. Michigan ave., Chicago 11. 35 cents each to members; 70 cents to non-members. Quantity discount prices on application.

A series of statistical studies of 21 basic industries and their employee safety performance during 1952, based largely on reports of member companies to the council. The pamphlet designated No. 90 covers transportation industries (except railroads) and No. 80 covers transportation equipment industries (including railroad equipment manufacturing).

Because the former gives safety figures for air transport, marine transport, city transit, and storage and warehousing, it is a possible source of comparison with railroad industry figures as given by the council in its annual Green Book.

•

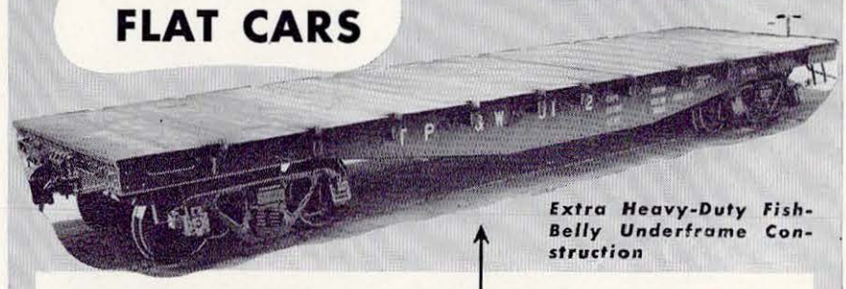
50 YEARS: A START FOR THE FUTURE. 24 pages, illustrations. Standard Pressed Steel Company, Jenkintown, Pa. Free.

"There is no time more important than the future." "We're all going to spend the rest of our lives there." So saying, this brochure eschews the typical pictures of the first plant, of officers in sideburns and a worried look, of relics of early days. It does admit the company had a past, an honored one, sketches it with drastic brevity,

(Continued on page 138)

70-TON
(170,100 lb. load limit)
FLAT CARS

for HEAVY DUTY HAULING



Extra Heavy-Duty Fish-Belly Underframe Construction

CENTER SILLS . . . Double fish-belly type fabricated of steel plate and angles **17"** deep from bolster to end sill, and **24"** deep at center of car. Sills have inside and outside 4" x 3" bottom angles, and 4" x 3" outside top angles. Center sills are continuous from end sill to end sill with 22" wide top coverplates.

SIDE SILLS . . . Heavy-duty fish-belly type, built-up of steel plate and angles 9" deep from body bolster to end sills, and 24" deep at center of car. Sills are constructed with 4" x 3" inside angles top and bottom.

The exceptionally heavy and rugged underframe construction of these cars classes them apart for bonus performance . . . trouble-free operation and years of added service. For 70-ton requirements (170,100 lbs. load limit) these CFC REBILT flat cars are premium buys for you.

To meet requirements where nominal capacity demands are under 50 tons (132,-100 lbs. load limit) these cars are available with 50 ton trucks. Thus, substantial initial cost-of-car savings are effected as well as the cost of hauling the weight of heavier trucks.

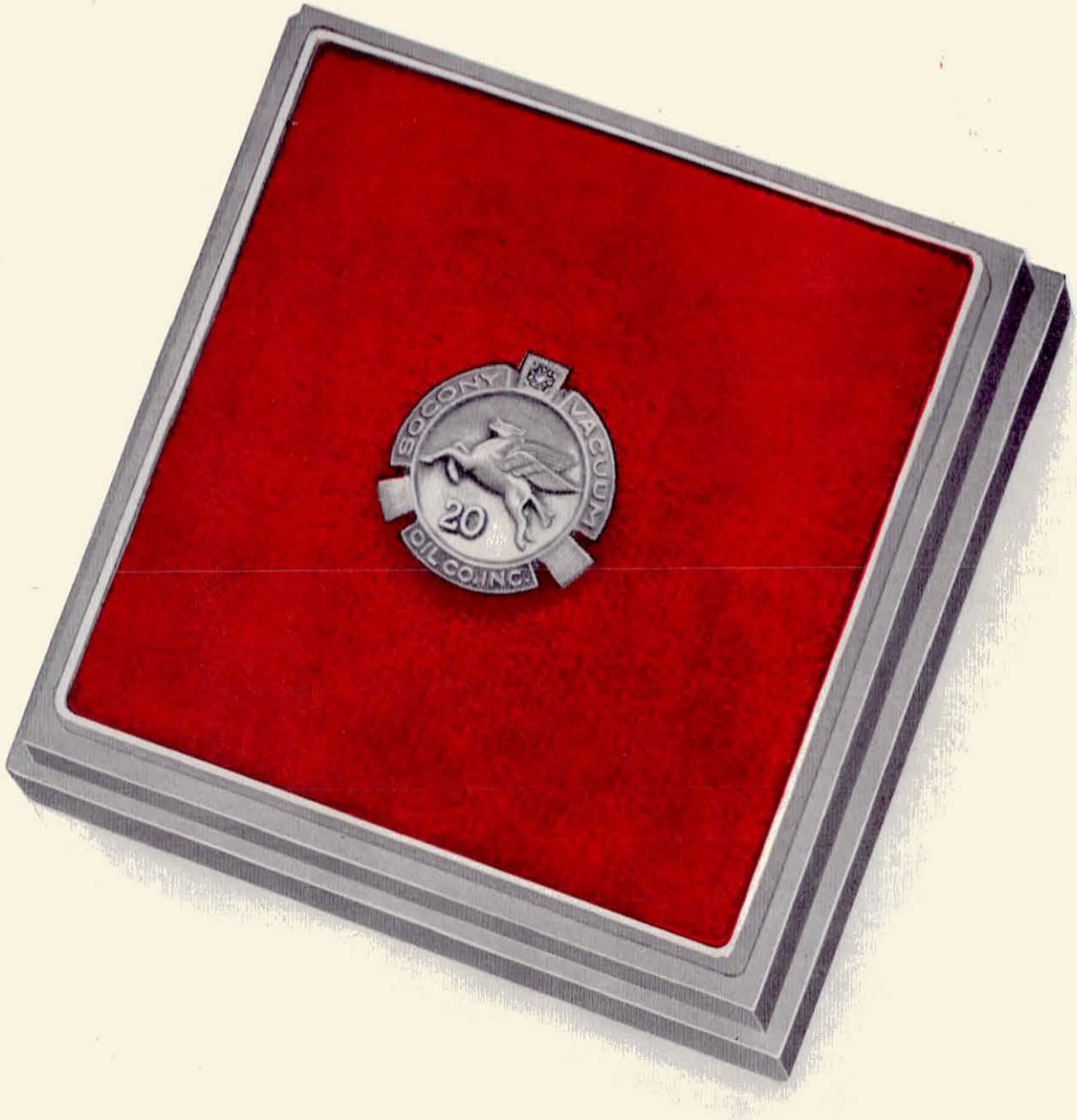
GENERAL SPECIFICATIONS

	70 TON	50 TON
Capacity, Nominal:	140,000 lbs.	100,000 lbs.
Light Weight Approx.:	39,900 lbs.	36,900 lbs.
Load Limit:	170,100 lbs.	132,100 lbs.
Length over strikers:	40 ft. 6 in.	40 ft. 6 in.
Width:	9 ft. 6 in.	9 ft. 6 in.
Trucks:		
Capacity, Nominal:	70 TON	50 TON
Side Frames:	Cast steel, full U section	Cast steel, full U section
Wheels:	33" dia. steel	33" dia. cast iron
Axles:	6" x 11"	5½" x 10"

Write for Descriptive Sheet Giving Complete Specifications

CHICAGO FREIGHT CAR... and parts company
CHICAGO, ILL. AUBURN, WASH. PUEBLO, COLO.

MAIN OFFICE: 228 North LaSalle Street, Chicago 1, Illinois



SERVICE PIN... for you, too

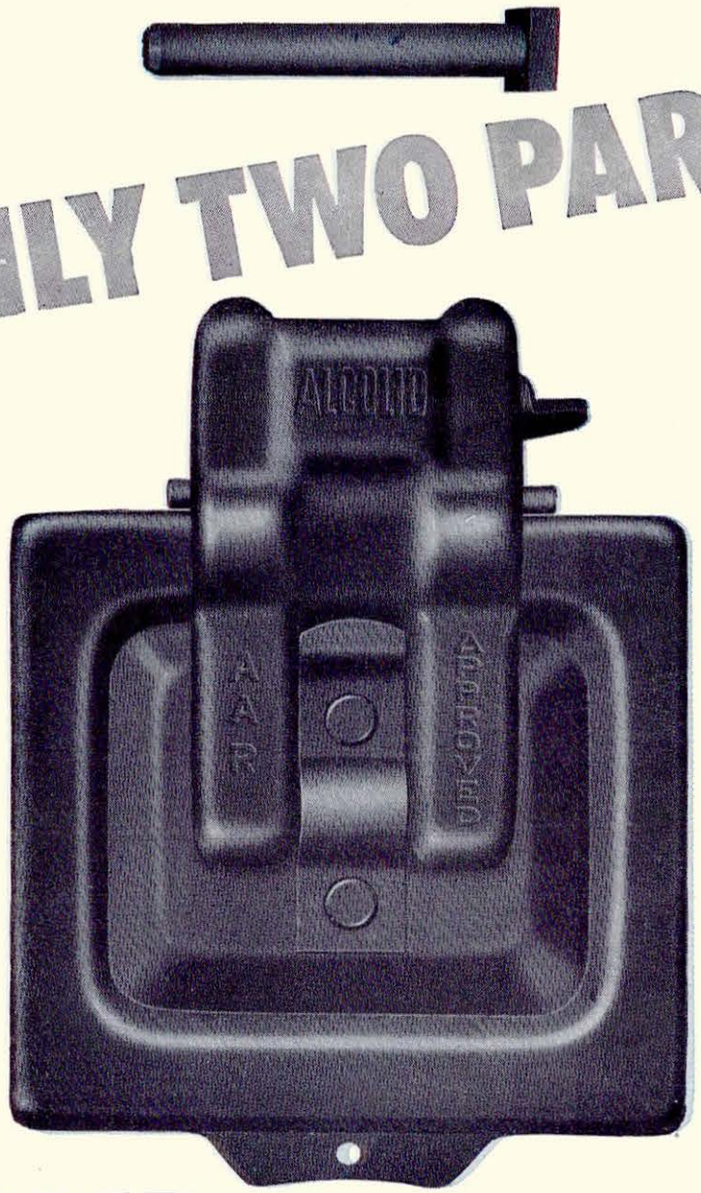
Chances are you've seen this pin. It represents 20 years of service with Socony-Vacuum. The average length of service of all our representatives calling on railroads is well above this figure. All this petroleum experience—the world's greatest—is yours when you call in Socony-Vacuum. Why accept anything less?

Socony-Vacuum Railroad Lubricants *Correct Lubrication*

WORLD'S GREATEST LUBRICATION KNOWLEDGE AND ENGINEERING SERVICE

SOCONY-VACUUM OIL COMPANY, INC., RAILROAD DIVISION, 26 BROADWAY, NEW YORK 4, N.Y.

ONLY TWO PARTS



ALCOLID® the lifetime journal box lid

With only these two parts the ALCOLID is one of the simplest and most dependable lids ever designed, giving up to 17 years of freight service* with only negligible evidences of wear.

The sturdy, full-section all-steel construction of the ALCOLID has no thin parts to rust away. The square-headed, locked retaining pin never rotates, thus eliminating wear on the eyes of the hood. Fully articulated, the ALCOLID provides tight closure; a rugged, torsional spring exerts fifty pounds pressure to prevent lid vibration. In addition to all this, ALCOLIDS can be installed in a matter of seconds.

Why not take advantage of all these features? Send for full information to your ALCO sales representative in New York, Richmond, Cleveland, Chicago, St. Louis, St. Paul. San Francisco.

*according to actual test runs

ALCOLID
PATENTED
RAILWAY STEEL-SPRING DIVISION
AMERICAN LOCOMOTIVE COMPANY

(Continued from page 135)
and then concentrates on being a history of the company's present and future.

Standard Pressed Steel is the world's largest producer of socket head screws and a large volume producer of dowel pins, pressure plugs, locknuts, specialty parts, and shop equipment. A $10,000,000 program of expansion in machines and building construction is fast nearing completion. In text and some 60 pictures, this golden anniversary book shows an enterprising, fast-growing company in operation, and reveals its policies, practices and purposes in sections devoted to its employees, its products and its progress.

BOOKS

RAILWAY STATISTICAL MANUAL. Association of American Railroads, Committee on Statistics, Accounting Division, Washington 6, D.C. $3.75.

This "collection of information and reference material relating to source, preparation and use of railroad statistics" has been assembled as an aid in dealing with statistics of railways. The foreword says "It [the manual] lays no claim to originality, except that it brings together in a convenient arrangement the sources of information which are useful in preparation and analysis of transportation statistics." Section 1, "Railroad Accounting and Statistics," is reprinted from the A.A.R.'s "Transportation in America." Section 2 is a glossary of terms, units and phrases. Section 3 is the classification of train-miles, locomotive-miles and car-miles prescribed by the I.C.C. Section 4 covers I.C.C. rules, instructions, interpretations and definitions used in connection with the reporting of railway operating statistics. Section 5 contains the I.C.C.'s rules governing separation of operating expenses, railway taxes, equipment rents, and joint facility rents between freight service and passenger service and Section 6, the rules governing classification of railroad employees and reports of their service and compensation. Section 7 is a list of typical occupations or positions in railroad service. Section 8 contains wage statistics inquiries. Section 9 is a selected list of report forms for steam railroads prescribed by the I.C.C. Section 10 contains tables showing rate increases, passenger fare changes, railway mail pay increases, modifications in the express rate structure, average straight time hourly rate, and the index of average unit prices of railway material and supplies. Section 11 discusses freight commodity statistics; Section 12, the chronological development of the uniform system of accounts for steam railroads, and of railway accounting rules, and Section 13 is a selected reference list of publications.

GULF TO ROCKIES: THE HERITAGE OF THE FORT WORTH & DENVER-COLORADO & SOUTHERN RAILWAYS, 1861-1898, by Richard C. Overton. 410 pages, illustrations, maps, charts. University of Texas Press, Austin, Tex. $5.

Throughout the 1860's the mineral treasures of Colorado were virtually inaccessible for lack of railroads. Even after a hectic decade of building in the 1870's, the state faced a new sort of isolation: every railroad crossing her borders was controlled by the Union Pacific or the Santa Fe. As a result, the Rocky Mountain region could not compete with the midwest for business of the Atlantic seaboard.

To remedy this situation, John Evans, former governor of Colorado, organized in 1881 a railroad to run southward from Denver as the first link in a cheap rail-water route via the Gulf of Mexico to the East. Meanwhile ambitious Fort Worth citizens had incorporated the Fort Worth & Denver City in 1873.

Not a rail was laid on either road, however, until General Grenville M. Dodge, famed builder of the Union Pacific and the Texas & Pacific, took up the Texas project and joined forces with Evans to create the Gulf-to-Rockies route.

In his introduction, Mr. Overton says "By and large, this story is told from the standpoint of the entrepreneurs, the men who had to make the specific decisions that determined both short-run tactics and long-run strategy. In time those successive decisions, and the actions and reactions springing from them, gave rise to the policies and standards that constitute the basic heritage of the present-day Fort Worth & Denver-Colorado & Southern. 'Gulf to Rockies' is by design a human story, told more in terms of people than of things. This is not to minimize the importance of tangible acomplishments, but comes about simply because *why* and *how* particular men thought, felt, and acted had far more to do with the heritage they left than what they finally did. Indeed, the Gulf-to-Rockies road of 1898, so far as physical plant and operations went, would seem pathetically crude today. But the spirit that created that system as an institution and guided it up to that point is still an integral part of the modern going concern."

This volume is No. 1 in the series of "Studies in Business History" to be issued by Northwestern University, where Mr. Overton is chairman of the business history department.

TRADE PUBLICATION

KINNEAR RoL-TOP DOOR. 12 pages, illustrations. Bulletin No. 80, Kinnear Manufacturing Company, Fields ave., Columbus 16, Ohio.

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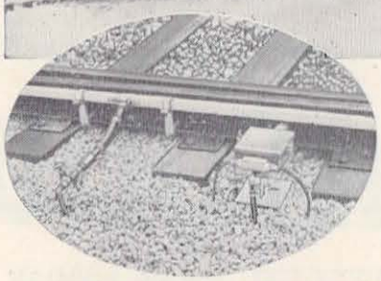

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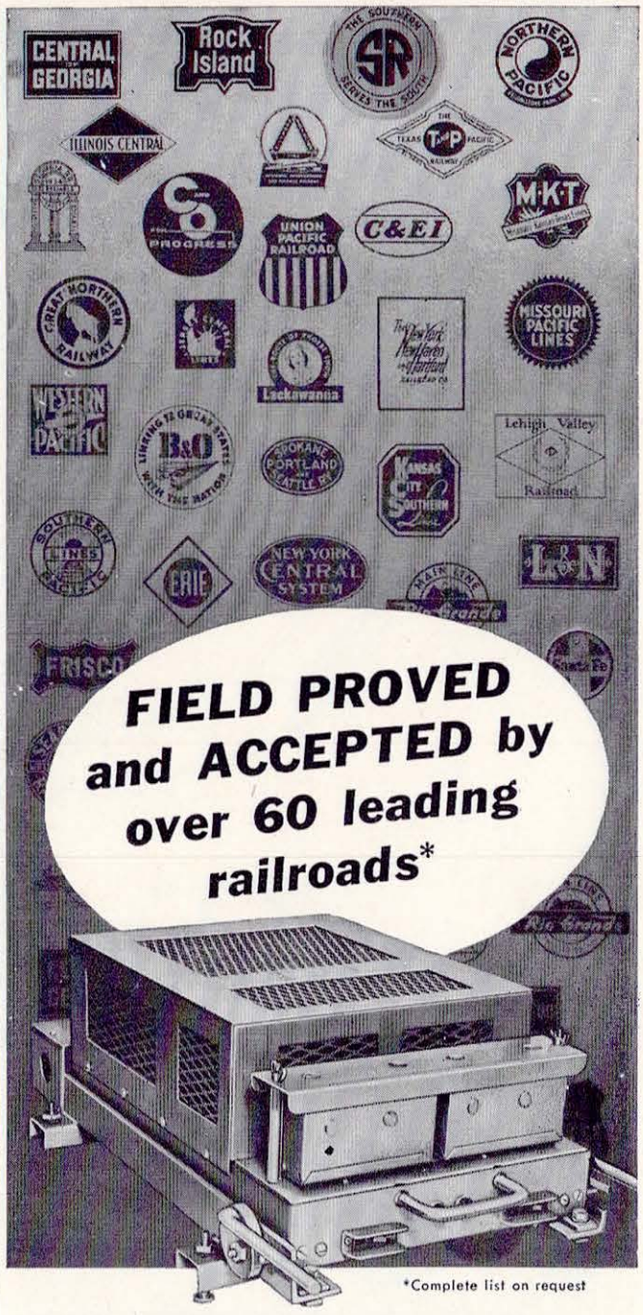

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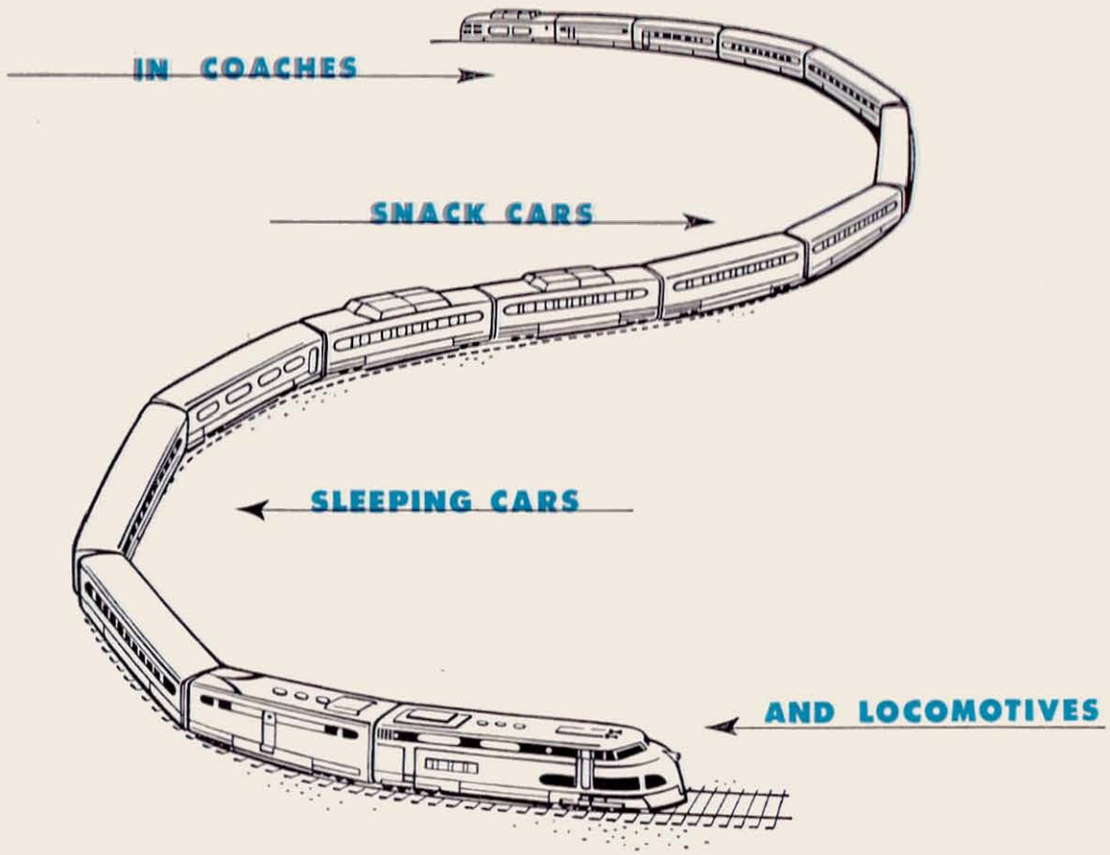

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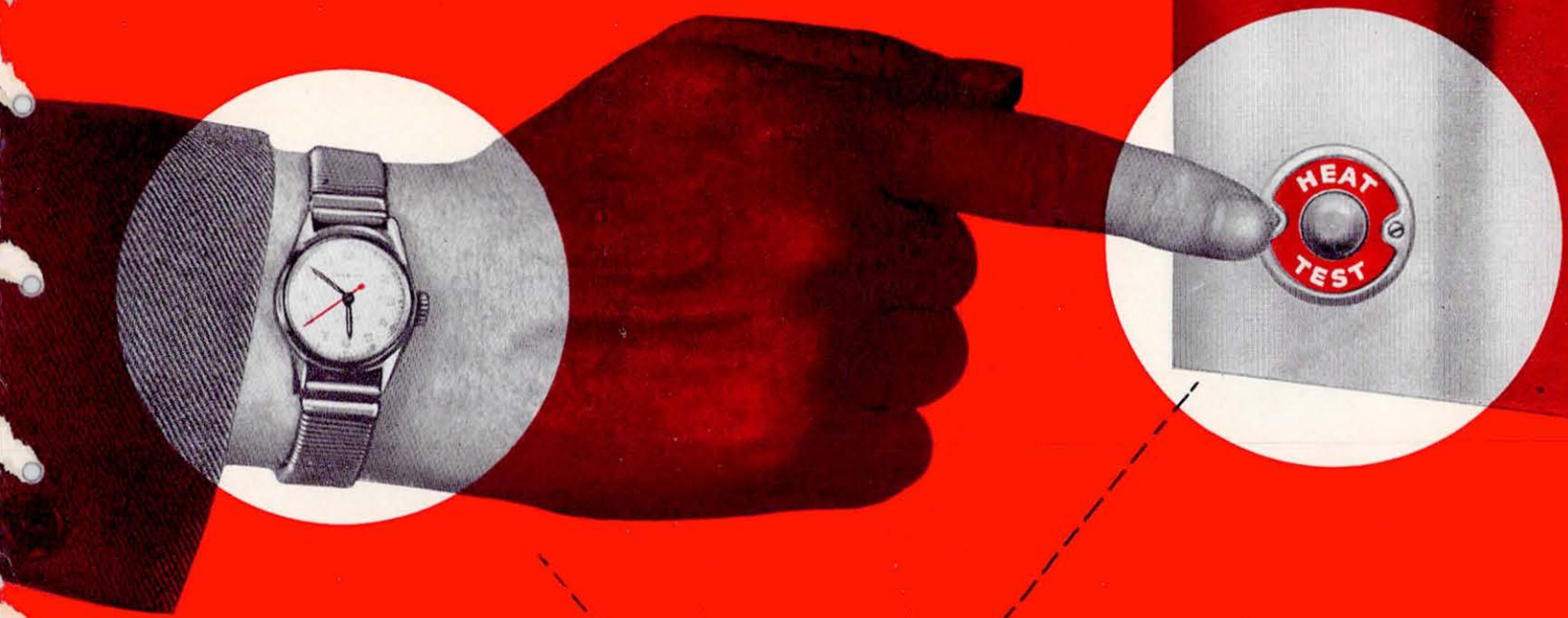

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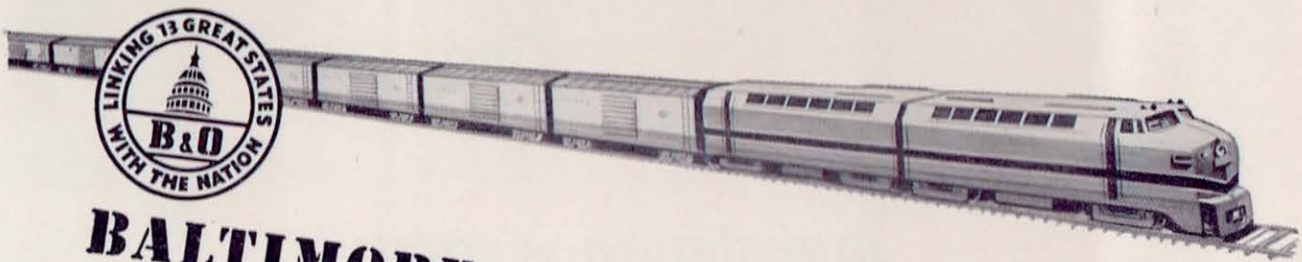

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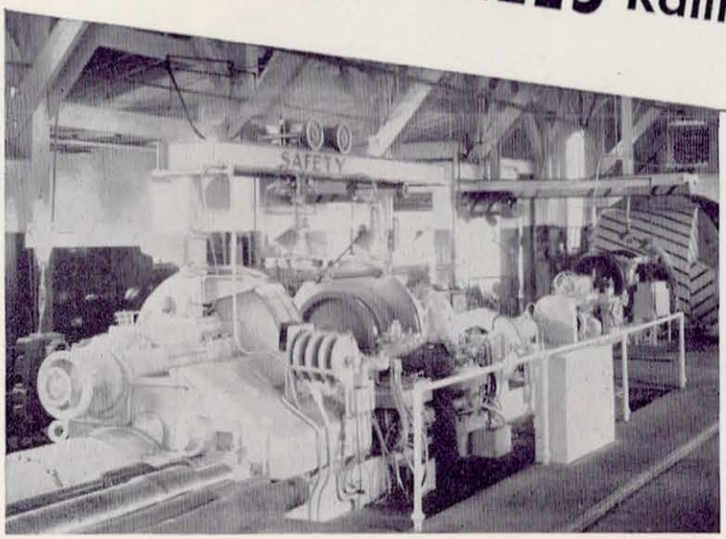

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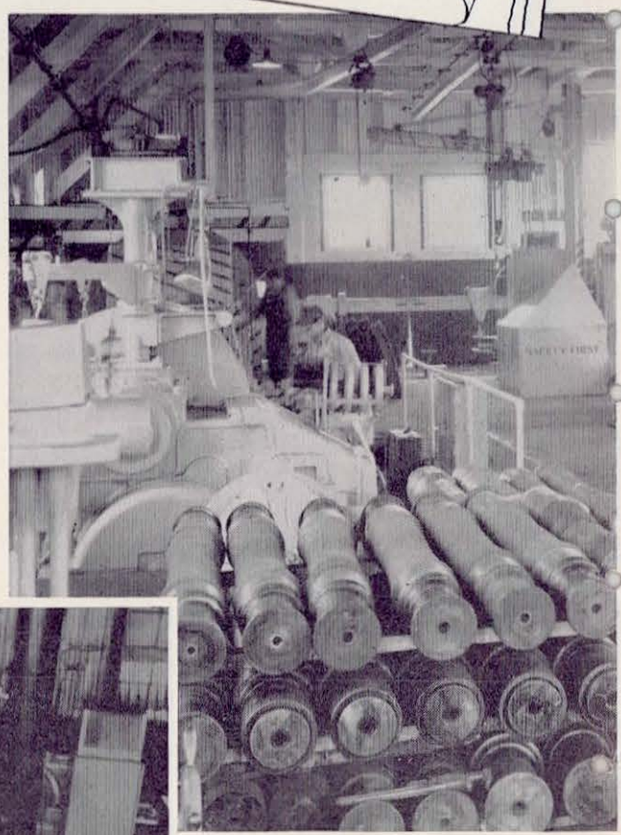

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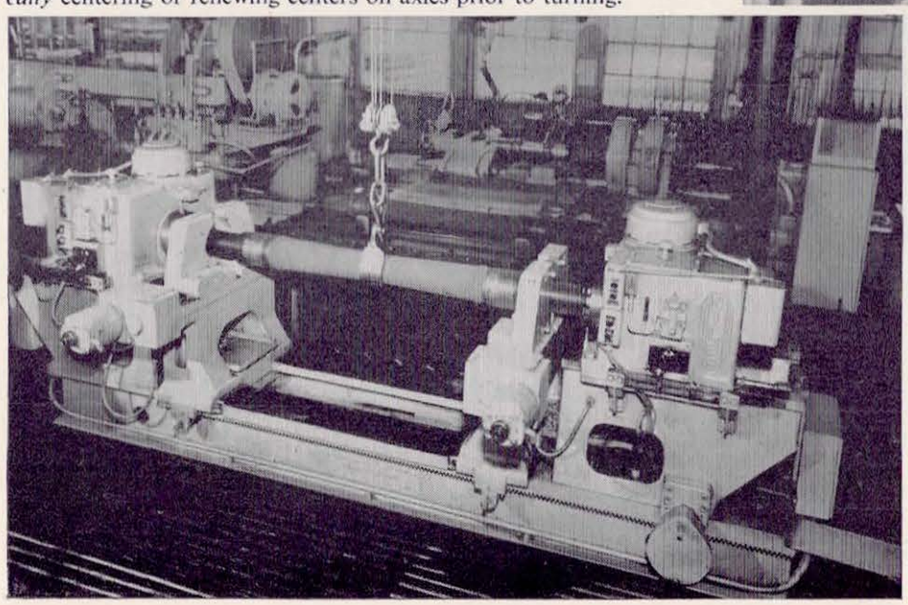

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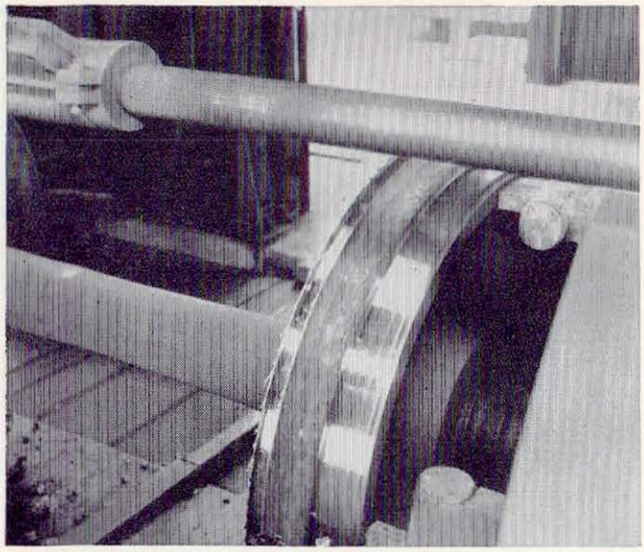
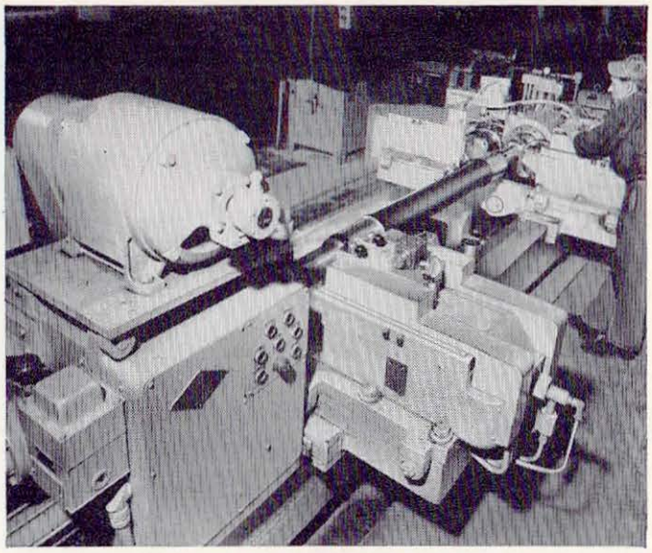


CLOSE-UP of the turret on the Niles 52" Hydraulic Car Wheel Lathe profiling and flanging tools in simultaneous operation. This Ivorydale installation was the first equipped with hydraulic feed traverse and contour profiling.



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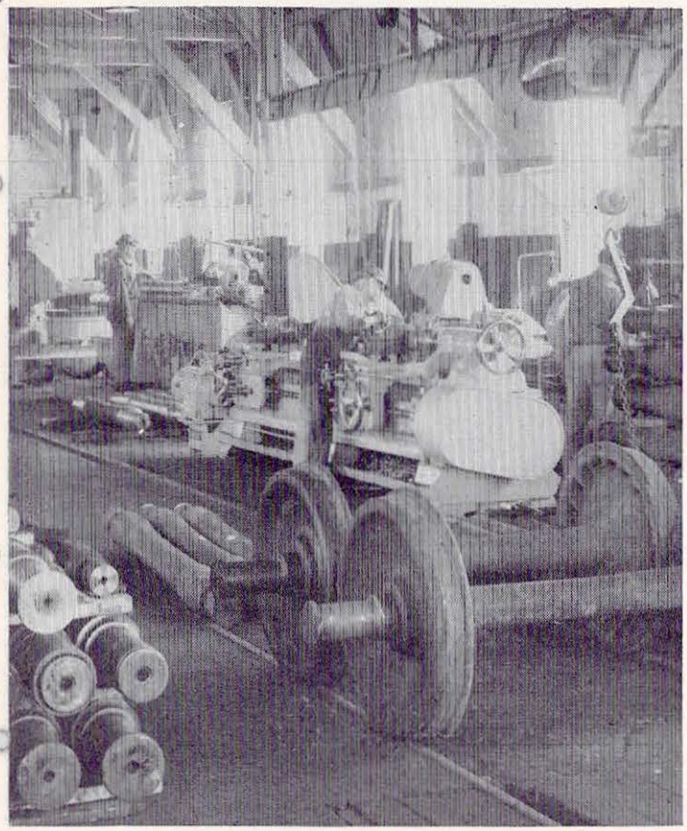
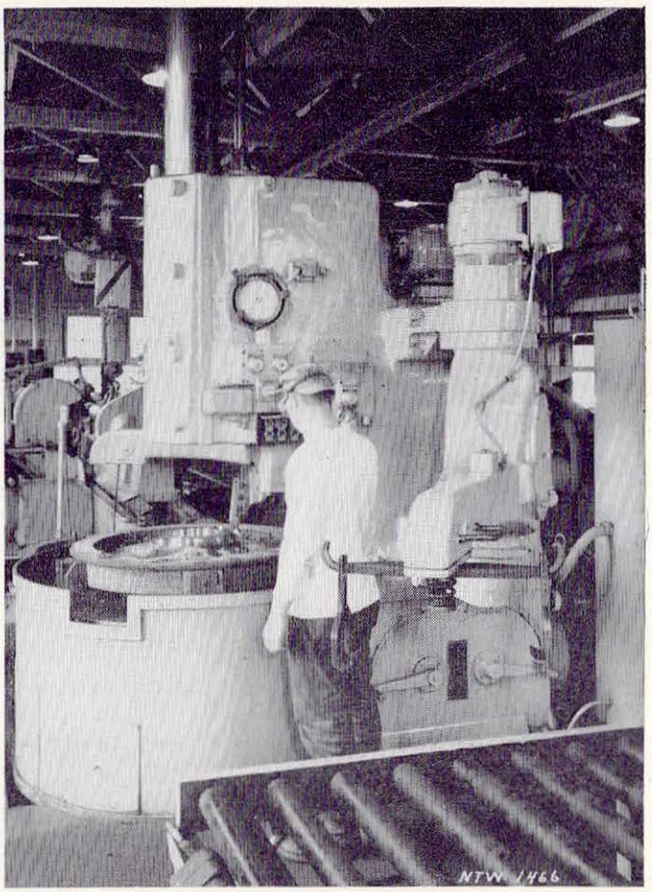


SHOP SCENE at Ivorydale shows four of their modern Niles Railroad Tools in operation . . . Left Rear: Niles 52" Car Wheel Lathe; Right Rear: Niles 48" Wheel Borer at work; Right Center; Two Niles Center Drive Axle Lathes. Foreground: Stocks of axles and wheel sets before operations.



NILES 48" HYDRAULIC WHEEL BORER hub facing and hub turning at the Ivorydale B&O Railroad Shops.

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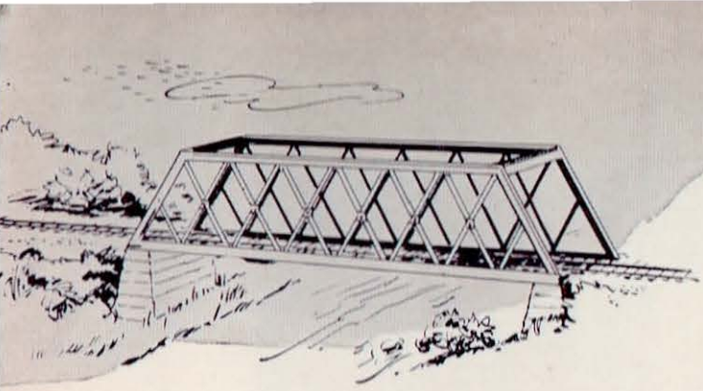

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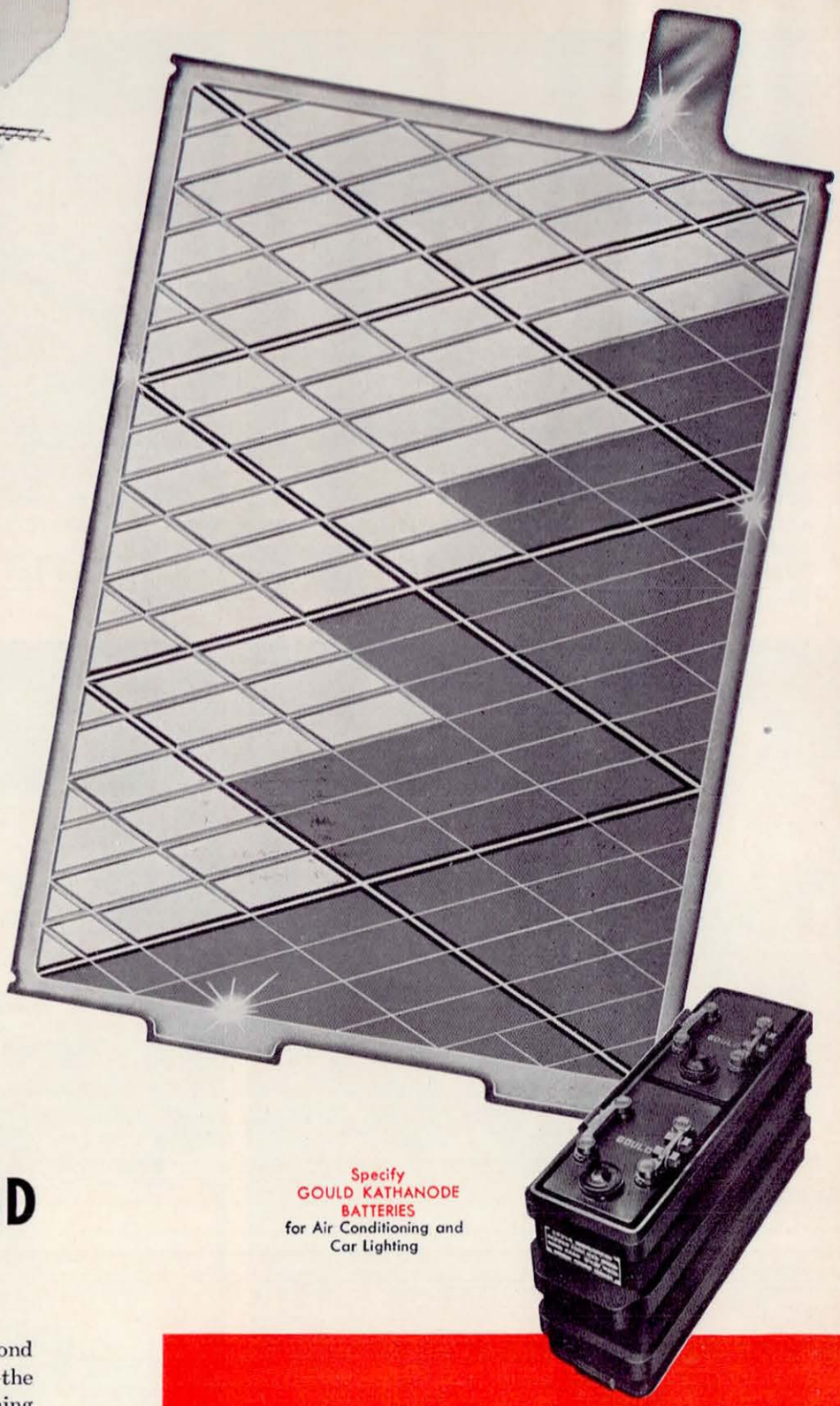

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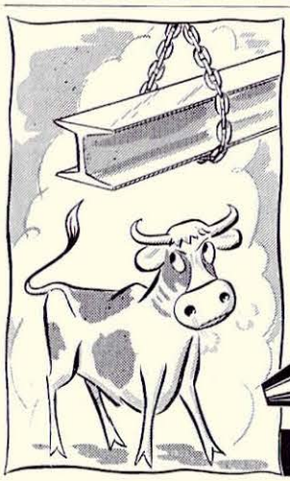

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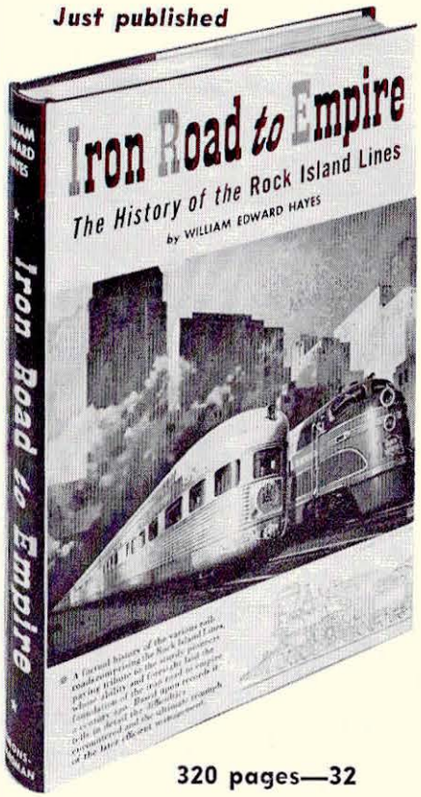

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